TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

No. 221.

THE RUBBER-COATED HARNESS-TRIMMING COMPANY, ANDREW ALBRIGHT AND LUTHER C. VOORHEIS, APPELLANTS,

vs.

WILLIAM M. WELLING.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF NEW JERSEY.

FILED OCTOBER 15, 1875.

SUPREME COURT OF THE UNITED STATES.

No. 221.

THE RUBBER-COATED HARNESS-TRIMMING COMPANY, ANDREW ALBRIGHT AND LUTHER C. VOORHEIS, APPELLANTS,

vs.

WILLIAM M. WELLING.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF NEW JERSEY.

INDEX.

	Original.	Print.
Docket entries	1	1
Bill of complaint	3	1
Stipulation	9	4
Answer	10	5
Replication	14	7
Complainant's Exhibit, J. G., jr.	16	8
2, J. G., jr	17	8
3	17	8
4	17	8
Langstroth, F. W., testimony of, direct	17	8
cross	19	9
Albright, Andrew, testimony of, direct	19	10
cross	21	10
redirect	21	11
recross	22	11
redirect	23	11
Complainant's Exhibit No. 5, J. G., jr	24	12
Welling, William M., testimony of, direct	26	13
cross	28	14
recross	32	17
Elliott, John Boyd, testimony of, direct	34	18
cross	42	22
Complainant's Exhibit No. 8, J. G., jr	36	18
Defendant's Exhibit No. 1	64	34
No. 2	64	34
No. 3	64	34
No. 4	65	34
No. 5	65	34
No. 6	65	34

	Original.	Print.
Welling, William M., testimony of, direct	65	34
cross	69	37
redirect	70	37
Testimony for defendants	71	38
Albright, Andrew, testimony of, direct	72	38
Defendant's Exhibit No. 10	72	38
Letters-patent to Andrew Albright, February 12, 1867, marked Exhibit	72	38
Re-issued letters-patent, No. 5,155, 5,156, to Andrew Albright, 26th November, 1872, marked Exhibit	72	38
Re-issued letters-patent No. 5,172, 5,173, to Andrew Albright, December 3, 1872, marked Exhibit	72	38
Original model, application of S. G. Welling, filed in Patent-Office April 29, 1862, Exhibit	73	39
Hedrick, Benjamin S., testimony of, direct	74	39
cross	80	43
Albright, Andrew, testimony of, cross	82	44
redirect	89	48
Tompkins, William L., testimony of, direct	91	49
cross	92	50
Gorum, George G., testimony of, direct	93	50
Defendant's Exhibit No. 1, withdrawn by consent	94	53
Opinion	95	53
Decree	109	55
Injunction	114	56
Master's report	116	57
Master's opinion on order of reference	119	58
Final decree	127	60
Bond	129	61
Petition for appeal	133	62
Citation	136	63
Admission of service of appeal and citation	138	64
Clerk's certificate	139	64

1 *Docket entries.*

Whitney & Betts.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING CO. } On bill in equity.

J. C. Clayton.

1872.
Nov. 11. Bill filed and writ issued, ret'ble Dec. 2, 1872.
" 12. Writ returned served.
Dec. 10. J. C. Clayton enters appearance.
Dec. 30. Consent to amend bill by adding the names, "Andrew Albright & Luther C. Voorhees," of Newark, N. J., as defendants, all the def'ts to appear by the first Monday in January, '73, and to have 30 days thereafter in which to answer.

1873.
Jan'y 6. Joseph C. Clayton, esq., appears for the defendants.
Febru'y 4. Answer filed.
March 5. Replication filed.
August 4. Depositions for defendants received under seal.
August 16. Pl'ff's notice of issue and trial filed.
Sept. 23. Ordered for hearing Sept. 25, '73, at 10½ a. m.
Sept. 25. Continued to Sept. 30, '73.
Sept. 30. Called and argued.

1874.
May 25. Opinion filed.
June 2. Decree for injunction and account filed.
June 12. Injunction issued.
June 30. Injunction returned served.

2 1874.
Oct. 20. Motion for attachment heard.
Feb'y 23. Opinion filed, attachment denied, and order for master to proceed, &c.

1875.
April 9. Master's report filed. Final decree, and costs taxed at $342.50, filed.
April 17. Bond on appeal. Petition for appeal and citation filed.

3 To the honorable the justices of the circuit court of the United States for the third circuit within and for the district of New Jersey.

In equity.

William M. Welling, of the city of New York, county of New York State of New York, a citizen of the United States, brings this his bill against the Rubber-Coated Harness-Trimming Company, a corporation organized and doing business under the laws of the State of New Jersey, and Andrew Albright and Luther C. Voorhees, at the city of Newark, county of Essex, State of New Jersey.

And thereupon your orator complains and says that heretofore, and before the 28th of April, 1862, your orator, being then a citizen of the United States, was the true, original, and first inventor or discoverer of

a certain new and useful invention, to wit, an improvement in rings for martingales, etc., and that the said invention was not known or used by others before his invention or discovery thereof, and was not at the time of the application for letters-patent therefor in public use or on sale with the consent or allowance of your orator, as the inventor or discoverer thereof, contrary to the provisions of the statutes of the United States in such cases made and provided.

That prior to the grant of the letters-patent hereinafter mentioned, your orator, by instrument in writing, subscribed by him, assigned all his interest in said invention to Samuel G. Welling, of New Rochelle, N. Y.

That your orator made application in writing to the Commissioner of Patents of the United States for the granting of letters-patent
4 for said invention, and paid into the Treasury of the United States the fees required by law, and then and there also duly complied in all other respects with all the necessary conditions and requirements of the statutes of the United States in such case made and provided prior to the granting of the letters-patent hereinafter mentioned.

That on the 17th day of March, 1863, letters-patent of the United States, bearing date on that day, were issued to Samuel G. Welling, the assignor of your orator, according to law, whereby there was granted to him and heirs, executors, administrators, or assigns, for the term of seventeen years from the 17th day of March, 1863, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the invention or discovery aforesaid, a description whereof was given in the words of your orator, in the said schedule annexed to the said letters-patent, and was made part of the same.

That said letters-patent were issued in the name of the United States of America, and were sealed with the seal of the Patent-Office of the United States, and were signed by the Secretary of the Interior, and were countersigned by the Commissioner of Patents, and were numbered 37941, and were issued and delivered to the said Samuel G. Welling.

That thereupon, after the issuing of the said letters-patent, as aforesaid, the said patentee put the said invention into use.

And your orator prays that said letters-patent, and the schedule annexed thereto, as aforesaid, may be deemed and taken as part of his bill, and to the originals of which, or a duly-authenticated copy thereof, now in your orator's possession, and ready to be produced, he craves leave to refer.

And your orator further shows that on the 24th day of June, 1869, by assignment in writing, duly signed, delivered, and recorded in the Patent-Office, the said Samuel G. Welling assigned the said letters-pat-
5 ent to your orator, who is now the owner thereof, together with all claims for damages for infringing the same at any time.

And your orator has ever since the date of the said assignment been, and now is, entitled to all the rights, interests, and privileges thereby secured unto him in and to the said invention or discovery in the said particularly set forth, and is, and ever since the date thereof has been, entitled to the exclusive use of the said invention and improvement.

And your orator further shows unto your honors that the said invention or discovery, so patented aforesaid unto the said Samuel G. Welling, is of very great utility, and that the same has been extensively introduced into public use, and that the public have generally acquiesced in your orator's exclusive right to the same; and your orator

would, but for the wrongful acts of the said defendants and others acting in concert with them, have made large gains, profits, and advantages from the manufacture, use, and sale of the said invention; and your orator would, but for the wrongful acts and doings of the said defendants and others acting in concert with them, now be enabled to use the said invention, to which he is entitled to the exclusive right as aforesaid, with profit and advantage, but that by the said wrongful acts and doings he is now prevented and hindered from so doing.

And your orator further shows unto your honors, upon information and belief, that the said defendants, the Rubber-Coated Harness-Trimming Company, who are a corporation as aforesaid, and Andrew Albright and Luther C. Voorhees, well knowing the premises and the rights and privileges secured unto your orator, and in order to deprive him of the profits, benefits, and advantages which might, and otherwise would, have accrued to at Newark and elsewhere, and within the said district of New Jersey, and without the license or permission of your orator, they, the said defendants, have, ever since the 24th day
6 of June, 1865, unlawfully and wrongfully made or caused to be made, sold or caused to be sold, used or caused to be used, harness and carriage trimmings, &c., each and all containing the said invention, discovery, improvements, and combinations, consisting as therein and in the schedule set forth, of a ring manufactured substantially as set forth, with a metal ring enveloped in composition, substantially as and for the purposes specified, the exclusive right to which is secured to your orator as hereinbefore set forth, and which said unlawful making, use and sale, by the defendant as aforesaid, is a violation and infringement of your orator's exclusive rights and privileges, and that the said defendants have derived and received, and are still deriving and receiving, from such use great gain and profits, but to what amount your orator is ignorant and cannot set forth; but your orator prays that the defendants may be required to make a disclosure of all such gains and profits.

And your orator in like manner avers that the defendants, though requested to desist from such unlawful use, and to pay to your orator such gains and profits as the defendants have actually made, refuse so to do, by means whereof your orator is and has been greatly injured, and is now prevented from putting the said invention or discovery into successful operation, and is deprived and prevented from receiving the gains and profits to which he is lawfully entitled from the exclusive rights and privileges so granted and secured to him as aforesaid, and which he would have derived and acquired, and would now derive and acquire, but for the said wrongful acts of the said defendants.

And your orator prays that the said defendants may be compelled, by a decree of this honorable court, to account for and to pay over unto your orator all such gains and profits as have accrued or arisen to or been earned or received by the said defendants, and all such gains and profits as your orator would have received but for the said wrongful acts and doings of the said defendants, and all damages your
7 orator has sustained thereby, and that this honorable court will assess the same, or cause them to be assessed under its direction, and will increase the same, in its discretion, as provided by law.

And that the said defendants, their attorneys, solicitors, clerks, servants, agents, and workmen may be perpetually enjoined and restrained by the decree of this court from, directly or indirectly making or causing to be made, using or causing to be used, or vending to others to be used, in any manner, any harness or carriage trimmings, or other

articles containing or embodying the said invention granted by the said letters-patent, as issued aforesaid, and from infringing upon or violating the said letters-patent by the use or sale of the said invention in any way whatsoever. And that the said defendants may be decreed to pay the costs of this suit, and that your orators may have such other relief as the equity of the case may require and as to your honors may seem meet.

To the end, therefore, that the said defendants may, if they can, show why your orator should not have the relief hereby prayed, and may full, true, direct, and perfect answer make, according to the best of their, or their officers', clerks', agents', or workmen's knowledge, remembrance, information, and belief, to the several matters hereinbefore averred and set forth, as fully and particularly as if the same were here repeated paragraph by paragraph, and they were thereto severally and specifically interrogated:

May it please your honors to grant to your orator a writ of subpœna ad respondendum, issuing out of and under the seal of this honorable court, directed to the said defendants, the Rubber-Coated Harness-Trimming Company, and Andrew Albright and Luther C. Voorhees, commanding them to be and appear and make answer unto this bill of complaint, and to perform and abide by such order and decree herein as to this court may seem required by the principles of equity and good conscience.

8 May it also please your honors to grant to your orator a provisional or preliminary injunction issuing out of and under the seal of this honorable court, enjoining and restraining the defendants and their officers, attorneys, solicitors, clerks, servants, workmen, and agents to the same purport, tenor, and effect hereinbefore prayed for in regard to said perpetual injunction.

And your orator will ever pray, &c.

W. M. WELLING.

WHITNEY & BETTS,
Complainant's Solicitors.
FREDERIC H. BETTS,
Counsel.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

On this seventh day of November, 1872, before me came W'm M. Welling, to me personally known, who, being by me duly sworn, did depose and say that he is the complainant in the foregoing bill of complaint named, and that he has read the said bill, subscribed by him, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters which are therein stated to be on information and belief, and as to those matters he believes it to be true.

[L. S.] R. A. PIPER,
Notary Public.

9 *Stipulation.—Filed Dec.* 30, 1872.

Circuit court of the United States, district of New Jersey.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company.

The bill of complaint in this cause is hereby amended by inserting the following persons as additional defendants, viz:

Andrew Albright and Luther C. Voorhies, both of Newark, New Jersey.

All the defendants may enter appearance by the first Monday in January, and may have thirty days thereafter to file an answer.

WHITNEY & BETTS,
Comp't Sol'r.

J. C. CLAYTON,
For Def't Albright & Voorhies.

10 In the circuit court of the United States for the district of New Jersey. In equity.

W'M M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company and Andrew Albright and Luther C. Voorheis.

To the honorable the judges of the circuit court of the United States for the district of New Jersey.

The joint and several answers of Andrew Albright and Luther C. Voorheis, impleaded with the Rubber-Coated Harness-Trimming Company, to the bill of complaint of William M. Welling.

These defendants, Albright & Voorheis, now and at all times hereafter saving and reserving to themselves and all manner of exception which may be had or taken to the manifold errors, uncertainties, imperfections, and insufficiencies in the said bill of complaint contained, for answer thereunto, or unto so much thereof as they are advised is material or necessary for them to make answer unto, answering, say:

That on or about the day of , 1867, the Rubber-Coated Harness-Trimming Company became a corporation under the general laws of the State of New Jersey; that after the filing of the certificate of incorporation the defendants, Albright & Voorheis, and others, began to do business under the said incorporation name; that the corporation as such has virtually ceased to exist; but that said defendants, Albright & Voorheis, have succeeded to the business of said company, and admit that they now are, and have been ever since the day of , 1868, manufacturing and selling rubber-coated harness-trimmings under the style and name of "The Rubber-Coated Harness-Trimming Company."

11 Further answering, defendants, Albright & Voorheis, say that they are informed and believe, and therefore admit, that certain letters-patent for an alleged improvement in martingale rings were issued and granted to one Samuel G. Welling on the day named in said bill; but defendants do not know and are not informed, except by said bill, whether or not complainant, as therein alleged, was a citizen of the United States; or whether or not due and lawful proceedings were had as therein stated before the said Patent-Office; or whether or not the complainant, as therein alleged, made or recorded any assignment to one Samuel G. Welling; or whether or not the said Samuel G. Welling assigned said letters-patent to the complainant, as in said bill alleged; and they leave the complainant to make such proof of the several matters above mentioned as he may be advised.

And these defendants, further answering, on information and belief,

deny that the said complainant, William M. Welling, was the original and first inventor of the alleged invention in said bill of complaint and letters-patent described, or any substantial or material part thereof; on the contrary, these defendants, on information and belief, say and aver that said alleged invention, and all material parts thereof, were, prior to any alleged invention by said complainant, *were* described, known, and patented in Great Britain, in the following letters-patent, to wit:

In the English patent No. 8080, A. D. 1839, to Thomas and Charles Clark.

In the English patent No. 9888, A. D. 1843, to Edward Banton.

In the English patent No. 13542, A. D. 1851, to A. V. Newton.

In the English patent No. 12437, A. D. 1849, to Charles H. Paris.

In the English patent No. 2249, A. D. 1860, to S. Barnwell and A. Rollason.

In the English patent No. 2381, A. D. 1855, to .

12 And that the said alleged invention, and all material parts thereof, was known, used, and practiced, and sold, among many others, prior to any alleged invention by complainant, as follows:

By Aaron Davis, now residing at Newark, N. J., at Newark, New Jersey.

By Peter Hayden, now residing at Sing Sing, New York, at and at other places in said State.

By S. E. Tompkins, now residing at New York City, at N. Y., and at other places in the same State.

By Henry Addis, John Bergen, Richard Campbell, A. H. Dunscombe, Wood Gibson, and Thomas Trainor, all of whom reside in New York City, and had such knowledge in said city.

And these defendants, on information and belief, deny that said alleged invention, or any material part thereof, was not known and used, and had not been on sale and in public use, more than two years prior to the application for said letters-patent, and with the knowledge and consent of the said complainant; but, on the contrary, upon information and belief, aver that the said alleged invention, and all material parts thereof, were in common public use, and were on sale with the knowledge of said complain't, more than two years prior to said application; and that said complainant, prior to his said application, with full knowledge of its public use, abandoned his said alleged invention, if any he had, to the use of the public; and further, defendants affirm, upon information and belief, that said complainant dedicated his said alleged invention, if any he had, to the use of the public.

And these defendants, further answering, say that they do not know, except as is alleged in said bill of complaint, that the said complainant has made and sold martingale rings of the character described and claimed in said letters-patent, but leave the complainant to make such proof thereof as he may be advised.

13 And these defendants deny that the public has acquiesced either in the right or the validity of the said letters-patent.

And these defendants admit that ever since about the year 1868 they have been, and now are, engaged in making and selling harness-trimmings covered with hard rubber, and that among such articles have been a few gross of martingale-rings covered with vulcanized rubber, all of which articles have been made and sold under and by virtue of sundry letters-patent of the United States therefor, granted to defendant Albright, or to Ralph C. Dunham, assignor to said Albright; but aver that said martingale-rings, so covered with vulcanized rubber, do not in any way infringe the rights of the complainant, and deny that thereby they have

infringed or violated any privileges granted to the complainant in and by said pretended letters-patent.

And these defendants aver that they, nor any one for them, have not made, used, or sold any other martingale-rings, or any other rings, except such as are last above admitted and described to have been made of metal covered with vulcanized rubber, under said last-named letters-patent.

And these defendants submit to your honorable court that the complainant has no right to any further answer said bill of complaint, or to any part thereof, than is above given; and further, that he has no right to the relief prayed for in the said bill of complaint.

And these defendants pray to be hence dismissed, with their just costs and charges in this behalf most unjustly sustained.

(Signed) ANDREW ALBRIGHT.
LUTHER C. VOORHEIS.

(Signed) J. C. CLAYTON,
Sol'r for Def'ts Albright & Voorheir, 7 Warren St., N. Y.

UNITED STATES OF AMERICA,
Southern District of New York:

On this 30th day of January, 1873, personally appeared before me Andrew Albright, one of the above-named defendants, who, being by me duly sworn, deposes and says that he has read the foregoing answer subscribed by him, and knows the contents thereof, and that the same is true of his own knowledge, except as to the matter therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) ANDREW ALBRIGHT.

Sworn to and subscribed before me this 30th day of January, 1873.
[L. S.] R. C. ELLIOTT.
Notary Public, N. Y. Co.

14 *Replication.—Filed March* 5, 1873.

Circuit court of the United States for the district of New Jersey.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company, and Andrew Albright and Luther C. Voorhees.

The replication of William M. Welling, complainant, to the answer of Andrew Albright and Luther C. Voorhees, impleaded with the Rubber-Coated Harness-Trimming Company, respondents.

The repliant, saving and reserving now and at all times hereafter all and all manner of benefit and advantage of exception which may be had or taken to the manifold uncertainties and insufficiencies of the said answer, for replication thereto says that he will aver, maintain, and prove the bill of complaint to be true, certain, and sufficient in law
15 to be answered unto; and that said answer is uncertain, untrue, and insufficient to be replied unto; without this, that there is any other matter or thing whatsoever in the said answer contained, material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently replied unto, confessed and avoided, traversed and

denied, is true; all which matters and things the repliant will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly pray as in and by the bill is already prayed.

WHITNEY & BETTS,
Complainant's Solicitors, No. 20 Nassau St., N. Y.

16 Circuit court of the United States, district of New Jersey. In equity.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company, Andrew Albright, and L. C. Voorhies.

Proof for final hearing, taken on the part of the complainant under and pursuant to the 67th rule in equity, before Joseph Gutman, j'r, examiner.

N. Y., *April* 21, 1873—2 p. m.

Present, M'r Betts, counsel for complainant, and M'r Clayton, counsel for defendants.

Complainant's counsel offers in evidence letters-patent of the United States to Samuel G. Welling, assignee of William M. Welling, for an improvement in rings for martingales, dated March 17th, 1863, No. 37941.

It is marked "Complainant's Exhibit J. G., j'r."

17 Also, an assignment of said letters-patent by said S. G. Welling to the complainant, William M. Welling, dated June 24, 1869, recorded July 7, 1869.

It is marked "Complainant's Exhibit 2, J. G., j'r."

Execution admitted.

Also, a bill for the purchase of certain articles from the Rubber-Coated Harness-Trimming Co., and the said certain articles themselves.

Bill marked "Complainant's Exhibit 3," and articles marked "Complainant's Exhibit 4."

Defendants admit that the articles produced were manufactured and sold by them.

Examination adjourned to April 28, 1873, at 2 p. m.

JOSEPH GUTMAN, J'R,
Examiner, &c.

N. Y., *April* 28, 1873—2.30 p. m.

Present, M'r Betts, counsel for complainant, and M'r Clayton, counsel for defendants.

F. W. LANGSTROTH, a witness of lawful age, produced on the part of the complainant, having been by me first duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth in the matter of controversy herein, and being examined by M'r Betts, says:

1. Q. What is your name, age, residence, and occupation?

A. My name is F. W. Langstroth; I am 27 years old; I reside at Rahway, New Jersey; I am employed in the saddlery and harness business.

2. Q. Have you ever visited the establishment of Albright & Voorheis, manufacturers of harness and carriage trimmings, in Newark, New Jersey?

A. Yes, sir.

3. Q. Have you seen the manner in which they manufacture their rings and other articles?

A. Within about a year and a half. I don't think I have been there since that time.

18 4. Q. Please state what was done at their establishment in process of manufacturing their rubber-coated rings. Detail steps of their process of manufactory.

(Question objected to by defendants' solicitor as immaterial and irrelevant to any issues in this cause.)

A. I could not swear that I ever saw them cover a ring. I have seen them generally. I have seen them take rubber in sheets, cut it into the desired shape, put it round whatever articles it was meant for, pinch it together and cause it to adhere on the edges, and place it in a vulcanizer; and afterwards finished up some articles by hydraulic pressure, and some simply scraped off and finished up and polished.

(Defendants' solicitor objects to all of this answer after the first sentence, as being irrelevant to any issue in the case.)

Q. You said in answer to the last question that the rubber was put around whatever articles it was meant for. Please explain that more fully. State what it was the rubber was put around.

A. It was put around the iron buckle, or the hame, or any other article they wished to cover.

Q. You also said that some of the articles were finished up by hydraulic pressure. Please explain that more fully. State what it was that gave the finish to such articles.

(Same objection as last above.)

A. When I used the word finished up, in my previous answer, I meant give it form.

Q. What was it that gave the articles form?

(Same objection.)

A. Steel dies in connection with hydraulic pressure.

Q. Do you know whether at that time Albright & Voorheis were making and selling rings coated with rubber?

A. Yes, sir.

19 Cross-examined by M'r Clayton:

Q. You have testified that you could not swear that you ever saw Albright & Voorheis cover a ring, and you have just said in answer to a question that you knew Albright & Voorheis were making and selling rings coated with hard rubber. Please explain upon what you base the statement that you knew they were selling rings coated with rubber when you had never seen them make any.

A. I bought them.

F. W. LANGSTROTH.

Subscribed and sworn to before me this 28th April, 1873.

JOSEPH GUTMAN, J'R,
Examiner, &c.

ANDREW ALBRIGHT, a witness of lawful age, produced on the part of the complainants, having been by me duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth, in the matter of controversy herein, and being examined by M'r Betts, says:

Q. What is your name, age, residence, and occupation?

A. My name is Andrew Albright. I am 41 years old. I reside at Newark, New Jersey. I am a manufacturer of hard rubber-coated harness and carriage-mountings.

Q. Are you one of the defendants in this suit?

A. Yes, sir.

Q. Did the defendants manufacture the rings marked "Exhibit 4" in this case?

A. I can testify to the manufacture of three pieces in Exhibit 4, but not the next to the smaller one, as that has not my stamp upon it.

Q. Please detail the process by which those rings were made?

(Question objected to as immaterial and irrelevant to any of the issues of this case.)

20 Defendants' solicitor here inquires of complainant's solicitor whether or not the exhibits referred to are martingale rings, and if shall appear that they are not martingale-rings, he will object to any testimony as to their construction, since complainant's patent is expressly limited to a certain kind of a ring called a martingale-ring.

(Complainant's counsel refers defendants' counsel to his client, the witness on the stand, who made the rings and ought to know what they are for.)

A. We have different modes of producing the rings shown in Exhibit 4. One mode, we take an iron ring, sheet or sheets of rubber rolled to the proper thickness, cut from the sheet a piece in the proper form, and envelop the iron ring with the covering of rubber, pressing the edges in the form of a lap with the fingers, causing the rubber to adhere and become a homogeneous piece or cover. (Previous to covering the ring with the rubber covering cut from the sheet, we take a rubber cement and apply it to the ring with a brush. Rubber cement is made by dissolving rubber in turpentine or benzine, which causes it to become a paste or varnish or glue. Such cement causes the outer covering cut from the sheet to firmly adhere to the iron while being vulcanized.) The ring, when covered, has this outer coating of rubber in a plastic state; the ring is then placed in an oven and vulcanized. After the ring is taken from the vulcanator after vulcanization, it is of irregular form or shape. We, to make the regular form or shape desired, put it in a lathe-chuck and turn it up in the form or shape desired, or by the use of a steel die engraved in certain form to produce a ring with such ornamentations on the outer ring as may be desired.

Q. State whether the exterior surface and ornamentation of the rings, Exhibit No. 4, is produced by dies or not.

A. The seam or imitation stitch is made by impressions from
21 the die; the surface-finish is made by the use of buff and polish-wheels; said wheels constructed from carpet and sheeting used in connection with ashes and water, rotten-stone and oil.

Q. Is the whole surface of those rings subjected to the action of the dies before being polished?

A. They are when used or formed in the die.

Cross-examined by M'r Clayton:

Q. What was the composition used for the covering of the Exhibit No 4. made of?

A. It was made from pure Para rubber or catouche, in which was mixed eight ounces of sulphur with sixteen ounces of rubber or catouche.

Q. Have all the rings made by defendants in this case since the year 1868 been covered with a coating in which rubber has been the chief ingredient?

A. All, to my knowledge, have been made with the same preparation described in my answer to the previous question.

9. X Q. Have they all been vulcanized after the coating has been applied to the rings?

A. They have.

10. X Q. When you used dies for the purpose described in a preceding answer, were the dies used after the rings had been vulcanized?

A. Always.

11. X Q. State whether or not you claim to manufacture these rings under letters-patent granted to you or to persons who have assigned their patents to you.

A. I manufacture these rings under letters-patent bearing date October 9, 1866; February 12, 1867; February 13, 1872; December 3, 1872.

Redirect:

12. R. D. Q. Did the complainant notify you some years since that he claimed you were infringing his patent?

(Objected to as immaterial.)

A. If my memory serves me correctly, he did send me a notice; I think in the year 1869.

22 13. R. D. Q. When you first commenced the manufacture of rings covered with rubber, did you use dies for shaping and ornamenting them?

(Same objection.)

A. No, sir.

14. R. D. Q. When did you first commence to use dies?

(Objected to as immaterial and irrelevant.)

A. I do not remember the exact time; it is over two years ago, I think.

15. Re-D. Q. You manufactured them for some time, then, without the use of dies?

A. Yes.

16. Re-D. Q. How came you to introduce the use of dies for such purpose?

A. To save expense in production of the rings.

17. Re-D. Q. Was the use of dies for such purpose known of by you before you introduced such use into your manufactory?

A. No, sir.

18. Re-D. Q. Do you claim to have invented the use of dies for such purpose?

A. I claim the invention of the die used by us in the manufacture of our goods.

19. Re-D. Q. Was the use of dies for the purpose of shaping and ornamenting the articles a valuable improvement on the previous methods of manufacture?

A. It was.

20. Re-D. Q. Prior to the commencement of your manufacture of rubber-coated goods, had you known of any rubber-coated rings having been made?

(Same objection.)

A. Never had any knowledge of it.

Re-cross:

23 21. Re-X. Q. Was the die used by you in ornamenting the rings, marked "Exhibit 4," described and claimed in one of the patents referred to by you?

A. It was.

22. Re-X. Q. Are any of the rings, marked "Exhibit 4," martingale rings?

A. They are not known in the trade and sold under the name of martingale rings, but under the name of "harness rings," and "breeching rings."

23. Re-X. Q. State, if know, how does the durability of such rings as these marked "Exhibit 4" compare with the durability of metallic rings covered with leather in the ordinary method by sewing, or with the rings manufactured by the complainant; and state, if you know, the relative rank and value of these three kinds of rings in the market for saddlery and harness hardware.

(Objected to as immaterial.)

A. The metal ring covered with leather in the usual way are very short-lived, from six to eighteen months in constant use. The rubber rings, like those marked "Exhibit 4," would last, constant use in the breech or bridle of the harness, from six to twelve years, unless broken by accident. The ring manufactured by complainant, so far as I have any knowledge, is considered a durable ring. The market sale of a ring covered with leather is greater than those made by the complainant. The rubber ring has a market value of at least two-thirds greater than the rings made by complainant. The ring made by complainant is only used, so far as my knowledge extends, as a martingale ring in cheap grades of harness, while the rubber ring finds an exclusive use in all the higher and more expensive grades of harness.

24. Re-X. Q. What is the relative rank and value of the rubber-coated rings of your manufacture, in comparison with the plated rings for harness?

(Same objection.)

A. Three times as great.

25. Re-D. Q. Are any of the rings, Exhibit 4, in fact sold and used for martingale rings?

24 A. The small rings in Exhibit 4 never can be used as martingale rings. The large rings may be used for martingale rings by the user if he chooses so to do.

ANDREW ALBRIGHT.

Sworn to before me this 28th April, 1873.

JOSEPH GUTMAN, J'r,
Examiner, &c.

Complainant's counsel offers in evidence letters-patent 89100, granted to the complainant April 26, 1869, for an elastic composition.

Said letters-patent put in evidence and marked "Exhibit 5."

Defendants' counsel objected to admission of said letters-patent as irrelevant.

Complainant rests.

Exhibit No. 5.—J. G., J'r.

UNITED STATES PATENT-OFFICE.

William M. Welling, of New York, N. Y. Letters-Patent No. 89100, dated April 20, 1869; antedated April 9, 1869. Improved elastic composition to imitate ivory and similar materials.

The schedule referred to in these letters-patent and making part of the same.

To all whom it may concern:

Be it known that I, William M. Welling, of the city and State of

New York, have invented, made, and applied to use a certain new and useful improvement in elastic composition; and I do hereby declare the following to be a full, clear, and exact description of the said invention, and to the features which distinguish the same from other compositions.

Heretofore a composition has been made resembling ivory, by the introduction of kaoline with shellac and camphor, and a reference is hereby made to letters patent granted to me August 4, 1857, for such compound, and also to the general method of mixing and working the material, the present compound being worked in a somewhat similar manner.

I make use of shellac and India rubber as the basis of my present composition, and introduce camphor, kaoline, white-lead, ivory-dust, dust of woods, and coloring-matter, according to whatever peculiarity of compound or color may be required for any particular article.

The India rubber that I employ is the native gum, without being vulcanized. This is to be partially dissolved, or sufficiently softened to be readily worked, and intimately mixed with shellac, in the presence of heat.

I find that rollers heated by steam are the best for mixing the shellac and rubber, and also for mixing in the other ingredients, so as to render the mass homogeneous.

The proportions of the materials may be varied according to the extent of elasticity required in the compound, and said materials are enumerated as follows:

No. 1. Shellac, one pound.
No. 2. India rubber, three ounces, more or less.
No. 3. Gum-camphor, half an ounce, more or less.
No. 4. Kaoline.
No. 5. Ivory-dust.
No. 6. Bone-dust.
No. 7. Dust of holly, satin, or other woods.
No. 8. Coloring-matter.

The last five articles are to be used in whatever proportion required, and one or more of them introduced, according to the color or peculiar character desired for the elastic composition.

What I claim, and desire to secure by letters-patent, is—

The elastic compound, formed by a mixture of the ingredients Nos. 1 and 2 in a heated state.

In witness whereof I have hereunto set my signature this 19th day of September, 1868.

W'M. M. WELLING.

Witnesses:
CHA'S H. SMITH.
GEO. T. PICKNEY.

Circuit court of the United States for the district of New Jersey.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TTIMMING Company and Andrew Albright et al.

Examination taken pursuant to the 67th rule of the Supreme Court for courts of equity, before Joseph Gutman, j'r, examiner by consent.

NEW YORK, *August 7th*, 1875.

Present, counsel for the respective parties.

WILLIAM M. WELLING, being duly sworn, doth depose and say, in answer to interrogatories proposed to him by Frederic' H. Betts, counsel for the complainant, as follows:

27 1. Q. What is your name, age, residence, and occupation?

A. William M. Welling; age, forty-five; manufacturer of compressed-ivory goods. I reside in New York.

2. Q. Have you before been examined in this case?

A. I have.

3. Q. In your examination on behalf of the defendants, you stated that ever since April, 1862, when you made the goods described in your patent on which this suit is brought, you used dies for pressing and finishing the composition; state whether you have here any of the original dies used by you.

A. I have one of the original dies with me.

(Witness produces a pair of dies, which are marked "Complainant's Exhibit No. 7, J. G., j'r.")

4. Q. Will you please explain how these dies have been used by you, and when you first commenced to use them?

A. First commenced to use them in April, 1862. They are used for forming the ring. The composition was put into one-half the die, the iron ring was then pressed into the composition, and the composition was turned up with the fingers to cover the top of the iron ring. The other half of the die was then put on, and it was put under press and pressed together.

5. Q. State whether or not all the rings made by you since April, 1862, have been made with these dies Exhibit 7, or dies like them.

A. All the rings that I have ever made have been made in dies like this.

6. Q. State whether or not the dies referred to by you in the specification of your patent on which this suit is brought are the dies Exhibit 7, or dies identical therewith.

A. They are identical therewith.

And being cross-examined by J. C. Clayton, esq., counsel for defendants:

28 7. X Q. Please state when you first made or had made a die similar to Exhibit No. 7.

A. I think it must have been in March, 1862.

8. X Q. Was that die exactly like the die Exhibit No. 7?

A. It was precisely the same with the exception of the centre-pin in place of the centre-pin which I now use. I used two pins, one in each corner, to keep the die in place after it was put together. That was the only difference. This die shows that they have been altered.

9. X Q. Please state whether or not your patent, under which this suit is brought, describes the form of any one; and, if it does, point out that part which does so.

A. I don't think it describes the form of any die.

10. X Q. Please state whether or not dies like Exhibit 7 are capable of finishing a ring like the ring having a lap at the outer edge and imitation stitching, as shown by "Complainant's Exhibit 4," without the use of any other tool.

A. They are capable of finishing a ring like that, with the exception of the stitching. To imitate the stitching it will have to be made in the die on the edge of the ring.

11. X Q. Would there not also have to be added to your die No. 7 a recess adapted to receive the lap on which the stitching is made, in order to finish a ring like Exhibit 4?

A. Certainly.

12. X Q. State whether or not a die adapted to finish rings No. 4 would be adapted to finishing rings shown in Exhibit No. 6.

A. They would not, as my rings are made without stitching. I don't consider the stitching as any advantage, as it is only a matter of fancy.

13. X Q. What was the condition of the composition in respect to hardness at the time it was put into the molds marked "Exhibit 7?"

29 A. It was soft and pliable, or of about the same consistency as soft rubber.

14. X. Q. These molds like Exhibit No. 7 were used, were they not, to make the composition conform to the ring?

A. We don't use molds. I think a mold means, or it is used for anything that is poured into it. Mine can be only used under a pressure.

(Defendants' solicitor objects to this answer as irresponsive and volunteer.)

15. X . Question repeated.

(Complainant's counsel objects to the question because it is founded on the untrue statement of the dies Exhibit 7.)

A. We don't use molds; we use dies to give them the proper shape and finish.

16. X Q. Does the mold or die cause the composition to conform to the shape of the metallic ring within the composition?

A. Of course it does, as we cannot make the ring without the die.

17. X Q. Is it not the function of a mold to give form to a fluid or non-solid substance?

A. Not with my material.

18. X Q. Is it not the function of a die to make impressions upon a solid substance?

A. Well, you can make impressions upon all kinds of substance with a die, either upon solid or thin plate or coin.

19. X Q. Does your ring, when finished, conform to the mold or die in which it is made?

(Objected to by complainant's solicitor on account of the persistent, untrue designation of the dies or molds.)

A. I have said before we don't use molds. Of course, it conforms to the die. It can't be otherwise. Anything made in a die must conform to the die. The die is what gives strength, solidity, and finish.

30 20. X Q. Does your mold or die, as you term it, make any impression upon the composition contained therein, other than to make it conform to the enclosed metallic ring?

A. Why, of course it does. It gives it finish and strength, as it is made under a pressure of from five to fifteen tons. There are different size screws. Without that pressure and die we cannot make a ring cheap enough.

21. X Q. Does your mold or die make any impression, indentation, or ornamentation upon the composition enveloping the ring?

A. A plain surface always gives a plain ring. If you want any indentation you can cut it in the die and get as many as you wish.

22. X Q. Question repeated.

A. The dies give a smooth surface only.

23. X Q. You have objected to my calling your mold or die No. 7 a

mold, and insist that it is a die; please define the distinction between a mold and a die.

A. Well, if I understand it properly, it is. that a mold is used for pouring into to give form to any running material, such as lead or iron or metal when fused, and a die is used for any material in mass, say wood or rubber, anything that can be handled, and to give shape to the article by means of the die and pressure together.

24. X Q. Are not molds always made in two halves?

A. I can answer the question. They are not. I have seen wax-molds that are made in one piece, I think.

25. X Q. Please.state why there are three circular cavities in the dies Exhibit No. 7.

A. The centre cavity forms the ring, and the inner and outer cavity are for the cut-off, or for the waste composition to run into.

26. X Q. Why are the interior surfaces of the centre cavity highly polished?

A. To give finish to the work.

31 27. X Q. State whether or not, at the time you made this invention, it was a matter of ordinary mechanical knowledge to construct such dies as Exhibit No. 7, adapted to any particular form of article proposed to be formed therewith.

A. It was considered so important an invention that a customer of mine gave me his check for $300 in advance for rings to be delivered.

28. X Q. Question repeated.

A. It was. I had other dies for other purposes for working the same material, such as billiard-balls, whist-counters; they were made in dies.

29. X Q. You state in your patent that in pressing the mass of composition with dies any plain or more or less ornamental shape may be given to said ring or the surface thereof; how would that be done?

(Question objected to defendants' solicitor as improper in requiring the witness to give a description of something which he might have used for a purpose referred to in his patent but which is not described therein.)

A. By cutting any design or figure onto the die.

30. X Q. Would or would not that have been within the ordinary knowledge of a die-maker at that time?

(Objected to by defendants' solicitor as leading and calling for an opinion.)

A. I should think so.

31. X Q. State whether or not the edges between the ring-cavity in the dies and the waste-cavity in the dies serve to cut off the waste material.

(Question objected to by defendants' solicitor as leading, and as wrongly assuming that there are edges, whereas, in point of fact, at t' e places referred to there are flat surfaces of considerable width.

Objection objected to by complainant's counsel as incorrect.)

32 A. The edges named are made expressly to cut off the waste, and they are a fraction less than a thirty-second of an inch. If they were made too sharp it would force the composition out too fast. The object in making them a little flat is to retain the material in the die, and in that manner retain the pressure on to the ring.

32. X Q. State whether the action of your dies Exhibit 7 on the composition of which your rings are composed has any effect in rendering the composition coating dense or hard, or durable, or susceipt'ble of high polish.

A. It has a very great effect with the pressure in rendering the mate-

rial dense and hard. It gives it a fine grain. Then it also made it more susceptible of taking a finer polish.

Recross-examination in answer to recross-interrogatories proposed by J. C. Clayton, esq.:

33. R. X Q. In answer to question 28 you said in effect that you had used dies similar to Exhibit No. 7 for pressing a similar composition for other purposes than rings before you began making your composition rings; for how long a time before had you so used such dies?

A. Since about 1857.

34. R. X Q. Is there anything in your patent answering a die with three cavities, such as are shown in Exhibit No. 7, or with what you have called during this examination edges or cut-offs? and, if there is, point it out.

Q. I don't know as there is.

(Witness examines the patent.)

35. R. X Q. Is not your composition so soft as not to need sharp cutting-edges?

A. It is not. You can't make a good ring without a sharp cutting-edge.

36. R. X Q. Do you call the edges shown in Exhibit No. 7, that you have said are a little less than one thirty-second of an inch, sharp cutting-edges?

A. I do.

33 37. R. X Q. You have said that your composition is soft enough to be molded to the ring by the fingers, and that your dies have sharp cut-off edges; please explain, if you can, how any compression can be given other than a very slight one to such a soft composition in such a die.

That's very easily explained. We take a piece of composition about the size for a ring. We lay it on a steam-table. When it is softened by heat, we then put the composition into a hot die, press in an iron ring, turn up the edges of the composition over the part of the iron ring left uncovered, put on the other half of the die, and put it into a cold press; the moment the cold from the press strikes the composition it begins to harden, and hardens so fast that it requires a heavy pressure to bring the two halves of the die together so that they will cut off.

38. R. X Q. Is there anything in your patent about discribing the process set forth in this answer? I mean so far as first using a hot die, then putting on the other part of the die, and then using a cold press. If so, point it out.

A. I think the whole process is described in my patent of 1857.

39. R. X Q. Is there any such description in the patent under which this suit is brought?

A. I don't know that there is.

40. R. X Q. You don't consider the process you have just described as a necessary one in manufacturing your rings, do you?

A. Of course I do. I don't know of any other way to manufacture them.

41. R. X Q. After the rings described in the patent under which this suit is brought leave the molds or dies like Exhibit 7, are they submitted to the action of any other dies?

A. They are not.

43. R. X Q. What labels are put by you upon the boxes in

34 which are sold the white rings (Compl't's Exhibit No. 6) and what

upon the boxes containing the black rings and the red rings respectively?

A. On the white rings I put the label "White Rubber Martingale Rings," with the number of the sizes on each size, and with the date of the patent. On a red martingale ring, "Red Rubber Martingale Rings," otherwise the same. On the black, "Black Rubber Martingale Rings," otherwise the same. My boxes all bear date of this patent—the patent of '63.

34. R. X Q. Do you claim that the black and red martingale rings, and that all metallic harness rings covered with composition of any kind are subject to your patent of 1863?

A. I do, most certainly.

W'M M. WELLING.

JOHN BOYD ELIOT, a witness of lawful age, produced on the part of the complainant, having been by me first duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth, in the matter of controversy herein, and being examined by M'r Betts, counsel for complainant, deposes and says as follows:

44. Q. What is your name, age, residence, and occupation?

A. John Boyd Eliot; age, 46; residence, New York City; mechanical engineer, solicitor of patents, and for many years I have often testified as an expert in patent cases.

(Complainant's counsel stated that the consent given by his associate to the withdrawal from the defendants' evidence of the English letters-patent granted to Alfred V. Newton, dated March 4th, 1856, was without the consent or knowledge and contrary to his wishes, and he requests defendants' counsel to consent that it be restored.

Defendants' counsel replies that in the first instance the patent referred to was put in evidence hastily and without due consideration, and that when he withdraw it under a consent it was his intention to withdrew it, so far as he was concerned, whether the consent was given or not, and declines to put the same in evidence again.

Complainant's counsel on his behalf, for the purpose of restoring the record to its integrity and of exhibiting the true state of the art prior to Welling's patent, offers the said letters-patent in evidence, marked "Complainant's Exhibit No. 8. J. G., j'r, examiner.")

45. Q. State whether you have had any knowledge or experience in regard to articles made of composition or rubber; and, if so, what?

A. I have had considerable experience in the manufacture of articles from composition of various kinds of substances in which rubber was more or less used in their manufacture. Have designed patterns for molds for forming various kinds of articles of irregular shape, and have constructed models for making the same, and have also made dies for finishing articles of a similar nature.

46. Q. Have you examined, and do you understand the invention described in the patent of William M. Welling, on which this suit is brought? If so, please state what you understand said invention to be.

A. I have examined said patent, and do understand the invention therein specified, and I understand said patent; the invention therein specified consists of a ring to be used for martingale or other similar purposes, and said ring is made in the following manner:

1st. A metal ring of suitable size and shape is provided as a core or foundation for the proposed ring.

2d. Said metal core is covered in some suitable manner by a proper

plastic composition, such as artificial ivory, which is mentioned as one kind of composition suitable for the purpose, although the inventor does not limit himself to a specific kind of composition, but claims broadly a composition, and said composition and metal'ic ring inclosed therein, are then submitted to the action of dies to press and
36 solidify the mass of 'omposition around the ring, thereby rendering the plastic substance firm and durable, and at the same time imparting a finish, either plain or ornamental, to the ring, according to whatever may be the design formed in the surface of the dies; or, in other words, and more briefly, the invention consists of a ring having a metal core covered with plastic composition when finished by dies, thereby producing an article of solidity and strength, at a very reduced cost to anything that had been produced prior to said invention, so far as within my knowledge.

47. Q. State whether you have examined the English letters-patent to Newton, "Complainant's Exhibit No. 8," and the English patents to Barnewell and Rollascon, "Defendants' Exhibit No. 6," and to Mayall, "Defendants' Exhibit No. 15," and to Paris, "Defendants' Exhibit No. 2," and to Thomas and Charles Clark, "Defendants' Exhibit No. 3," and to Banton, "Defendant's Exhibit No. 4," and state whether you find described in any said letters-potent the invention described in said Welling's patent?

A. I have examined the several patents or certified copies of the same, and in none of them do I find the invention described in the said Welling patent, for the following reasons: In the English patent granted to Alfred Vincent Newton the compound that is to serve as a coating for the metal or other substance to be protected is stated in the specification of said patent to be applied as follows:

"When it is desired that the compound of Caoutchouc or gutta-percha shall serve as a covering to the iron or other substance, a thin sheet of the compound, sometimes thirty-two parts of an inch in thickness or less, is pressed with great care upon the iron or other substance so as to expel all air from between the adjoining surfaces, and to cause the most perfect union and adhesion; the coated article is bound with strips or ribbons of cloth, or other suitable material, whereby the
37 compound is kept in close contact with the article during the process of hardening. The combined materials thus treated will be found to possess the qualities desired, the iron or other substance giving strength, and the compound giving a hard and durable surface. In this way may be produced many articles used in and about harness or carriages, such as saddle-trees, buckles, terrets, bits, stirrups, martingale-rings, dasher-irons, and articles intended to be used as furniture, either whole or in parts, and a great variety of other useful objects;" from which language it is very evident that the articles so made were not subjected to dies for the purpose of being finished, and therefore the process of manufacture is substantially different from that described in the said Welling patent.

In the English patent to Charles H. Paris, "Defendants' Exhibit No. 2," the invention is stated to consist "of certain means of coating articles made of wrought iron with glass or vitreous matter so as to keep off the atmosphere," and the composition is applied in a liquid state, and then heated to a sufficient temperature to cause the composition to vitrefy similar to enamelling, but nowhere is the substance described as of a plastic nature, nor is it subjected to the action of dies to finish it, and is therefore substantially different from the invention described in the said Welling patent.

So also in the English letters-patent to Thomas and Charles Clark, "Defendants' Exhibit No. 3," the invention set forth in their completed specification which is filed after a disclaimer to their first application, is stated to be: "For glazing and enameling cast-iron hollow-ware and other metallic substances," and the process of manufacture is substantially different from that set forth in the said Welling patent, for the simple reason that the glazing or enamel is applied as a liquid, and no dies are used for finishing the article.

Again, in the English patent to Edward Benton, "Defendants' Exhibit No. 4," among many other things, the specification recites as follows: "Sixthly. Of an improvement or improvements in the
38 various parts of harness which are subjected to friction during use, which improvement consists in coating or covering or lining such portions of harness with an enamel or vitreous composition;" and in its application the specification recites that "the parts to which I apply the coating are terrets, hames, swivels, buckles, rings, dees-hooks, and those parts of harness in general which are formed of metal; and the manner in which I apply it is as follows: I mix china clay with water until it has a consistence of cream, and I dip the article to be enameled in this mixture; on removal from the said mixture they are set aside to dry, and when dry they are heated in a furnace or oven until they acquire a red heat. The articles are then allowed to cool, and when cold I sprinkle on them a small quantity of the powder called 'lead or soft glass.' The articles are again heated, and the said powder fluxes and combines with the china clay with which the articles are coated." The specification also recites that, "instead of enameling or covering all over with the vitreous composition the parts of harness which are subjected to friction during use, sometimes only cover the interior parts of the same with the vitreous lining. In such cases I form linings of glass of a suitable form, and attach them in any convenient manner to the parts they are intended to defend from friction. The said linings are formed in molds by processes well understood, and they may be made either of flint colorless glass, or they may be made of glass of any desired color;" from which language it is evident that the process of manufacture is substantially different from that described in the Welling patent, inasmuch as in the first part of the process the operation is simply that of glazing the articles with a vitreous coating; and, in the second place, glass forms are molded according to the well-known process of forming glass shapes, and then required to be attached afterwards, and in neither case using dies during any part of the operation.

39 In the next exhibit of English letters-patent granted to John Edwin Mayall, "Defendants' Exhibit No. 5," the invention is simply for a composition of artificial ivory, for the purpose of producing tablets or plates for receiving photographic pictures, and therefore does not in any manner, that I can see, represent the invention described in the said Welling patent.

Again, in the English patent to Stephen Barnwell and Rollason, ("Defendants' Exhibit No. 6,") the title of which is, "For improvement in articles which may be used as paints or varnishes," recites as follows: "Our invention consists in dissolving pyroxylene in any of its known solidities, adding thereto oils, animal, vegetable, or mineral, varying in their nature and their action." And then "to this we add, if desirable, gums or resins, and also oxydizable salts," etc. And then "other suitable coloring agents, etc., may likewise be employed." Also, "animal matter in the shape of glue, gelatine, or wool-flock, we also find useful

for the purpose of strengthening the compound." The specification also recites that "the material resulting from these combinations is applicable to the manufacture of many solid, hollow, or tubular articles that have hitherto been made of glass, china, metal, wood, India rubber, and such like materials." Again, as an example of the articles made, the specification recites that "buttons may be made either by stamping them from a solid sheet of the new material, * * * * * or they may be shaped in molds while the material is in a plastic or semi-fluid state."

Said patent also recites that many fancy articles may be formed from such material "by employing molds or dies of any suitable material for which our composition has no affinity, or to which it will not adhere," etc. But nowhere in said patent do I find the formation of rings having a metal core covered with a composition, and afterwards subjected to dies for the purpose of hardening or solidifying and finishing said rings as described in the said Welling patent.

40 5. Q. Please state whether, at the date of Welling's patent, a person skilled in the business of making composition articles could understand, from the description given in said Welling's patent of the process of manufacture of the rings claimed therein, how to construct said rings, and how to subject them to the action of dies so as to produce the improved article claimed in said patent.

A. I have no doubt that any person skilled in the manufacture of said articles could readily understand the process of manufacturing said rings, and could readily produce them finished by the action of dies, as described in said patent, for the simple reason that a great variety of compositions were known prior to the time of said Welling patent from which the covering of said rings could be made; and the treatment of said compositions and process of manufacture was also well known; and hence all that was required at the time of the said Welling invention was to use a metallic core for the foundation of the ring, and to coat it with some of the well-known substances, and subject it to the action of dies to finish it, substantially as described in the Welling patent.

6. Q. In your opining, is the description of the dies, and manner and result of using them, contained in said patent, sufficient, in connection with the then state of knowledge of die-making and using, to enable any person skilled in the manufacture of composition articles to have made and used suitable dies?

A. It is.

7. Q. Have you examined and do you understand the subject-matter of the patents granted to the defendant, Andrew Albright, for manufacture of Rubber-Coated Harness-Trimmings, re-issues Nos. 5155 and 5156, dated November 26th, 1872?

A. I have examined said patents, and do understand the subject-matter of the invention therein described.

8. Q. Look at the rings, "Complainant's Exhibit No. 4," and, as-
41 suming them to be made according to the method described in said re-issues Nos. 5155 and 5156, state whether said rings are, in your opinion, substantially like or substantially different from the rings described in the Welling patent, and give your reasons for any opinion you may express.

A. I have examined said Exhibit No. 4, and find them, in my opinion, to be substantially the same as the invention described in the said Welling patent, and for the following reasons: In the said exhibit I find the use of a metal ring or core around which has been formed a composi-

tion, evidently vulcanized rubber, which has been applied in a plastic state, or in a condition which, during the process of manufacture, has been rendered soft to such a degree as to be acted upon by dies, and to take the form of said dies in the process of being finished, substantially as described in the said Welling patent.

9. Q. Does it make the said ring a substantially different article from the Welling ring described in his patent that the coating is composed of vulcanized rubber? Please give your reasons for any opinion you may express.

A. It does not, for the simple reason that the composition in the Welling ring is not limited to any specific composition, but may be any suitable substance or composition for enveloping the metallic ring or core that is capable of possessing the properties of hardness and toughness, and receiving a fine finish or beauty of appearance from the action of the dies.

10. Q. State whether or not, prior to the date of Welling's invention, rubber composition vulcanized had been known as a suitable substance for covering rings?

A. It had; and so also had many other compositions in which rubber had entered as an ingredient.

11. Q. Examine the dies, "Complainant's Exhibit No. 7," and in connection with the description in Welling's patent that they may be formed to give a more or less ornamented shape to the rings, state whether
42 they are substantially the same or different from the dies described in Albright's re-issue No. 5155?

(Question objected to by defendants' solicitor, in so far as it assumes that any dies are described in Welling's patent, which assumption defendants claims to be erroneous.)

A. They are, in my opinion, substantially the same as the dies described in Albright's re-issue referred to in the question, for the simple reason that the dies Exhibit No. 7 are provided with a polished surface for the purpose of finishing in a smooth and beautiful manner the exterior composition of the ring; the only difference being that the recess in the dies shown in the Albright patent referred to in the question for forming the outer edge to represent a seam or juncture, like two edges of leather folded together and stitched, is not shown in the dies "Complainant's Exhibit, No. 7;" but this I do not regard as of material difference, as it simply pertains to the finishing of the die or the style of ornamentation desired.

And being cross-examined by J. C. Clayton, esq., defendants' solicitor, he says, in response to cross-interrogatories proposed by M'r Clayton:

12. X Q. How long have you been a mechanical engineer?

A. For the last twenty years.

Examination was adjourned until Friday, August 8th, 1873, at 11 o'clock.

N. Y., AUGUST 8, 1873—11 a. m.

Present, counsel as before.

Cross-examination of the witness Eliot resumed by M'r Clayton, August 8th.

13. X Q. Thirteenth cross-question. Is it a part of your profession to testify as an expert witness?

A. It is.

14. X Q. What, if any, pecuniary advantage have you derived,
43 or will you derive, in consequence of your evidence in this case?

A. I have received my retainer fee of $100, and expect to receive my usual rate for services per day.

15. X Q. In the Welling patent, under which this suit is brought, occures the following words: "In letters-patent granted to me August 4th, '57, a composition and mode of making factitious ivory is set forth, and out of said invention I have manufactured billiard-balls, rings of various kinds, &c. My present invention does not relate to any particular composition, as that in the aforesaid patent or any similar compound may be employed. The natqre of my said invention consists in the employment of a metallic ring within a ring formed of artificial ivory, or similar materials for giving strength to the same, thereby producing a new article of manufacture, and one that is stronger than an ivory ring, and possesses all the beauty of appearance, and can be afforded at a very much less cost." Does not that description declare that the invention has for its object the making a martingale ring in imitation of an ivory ring by the use of the composition described in the Welling 1857 patent, or by the use of a "similar compound" or "similar material?"

A. It does, in so far as the composition is concerned.

16. X Q. Is hard rubber, such as is used on defendants' martingale ring, (shown in "Defendants' Exhibit No. 4,") a similar material or similar compound to the factitious ring referred to in the above quotation from the Welling patent?

A. I regard it as one of that "similar material" referred to in the said patent. Artificial ivory is mentioned in the said patent as one of the substances to be used for coating or covering the iron ring or core, but as I understand said specification in the words "similar materials" are intended to include any composition of a plastic nature which
44 would cover the iron core, and when finished by the same process as the artificial ivory composition would possess all the beauty of appearance desired in such articles; and the claim recites "a metal ring enveloped in composition," from which language I understand that the inventor did not intend to bind himself to the composition described in his patent of August 4th, '57, or to any particular composition, inasmuch as the specification recites as follows: "My present invention does not relate to any particular composition."

Question repeated.

A. It is, in so far as relates to the formation of the ring claimed in said Welling patent, under which this suit is brought.

17. X Q. I did not ask you anything about the formation of the rubber or the imitation ivory upon the iron ring, but simply whether or not the rubber referred to in the question was a similar material or similar compound to the fractitious ivory named in the quotation, and again repeat the question.

A. So far as relates to the substance themselves they are of course different.

18. X Q. When in the quotation above made by me M'r Welling said "my present invention does no' relate to any particular composition as that in the aforesaid patent or any similar compound may be employed," are not the words "particular composition" qualified and limited by the words "aforesaid patent or any similar compound, so as to mean that the particular composition is similar to that in the aforesaid patent or any similar compound?

A. No; I do not regard the quotation referred to as limited in any manner, but an assertion on the part of the inventor that he does not mean to be limited to any particular composition that will cover rings of metal and be capable of receiving a beautiful finish by dies; the

words in the specification, "as that in any similar compound," are
45 merely introduced to illustrate in a general manner the nature of the composition that may be used, or of one kind of composition.

19. X Q. Do you construe the last-made quotation as consisting of two independent sentences, the second one beginning with the word "as?"

A. I do. I regard the word "as" there as a substitute for the word "for," and used in the same sense, or "for" for the reason.

20. X Q. In the original patent now before you and in evidence, is the word "as" written with a capital letter, and does it immediately follow any punctuation mark?

A. It is not, and does not.

21. X Q. Does not that part of the patent quoted in cross-question 15, beginning with the words "the nature of my said invention," declare that the invention consists in the employment of a metallic ring within a ring formed of artificial ivory or similar material, and does not this clause, separated by a semicolon, form the preceding clause, which uses the words "particular composition," qualify the words "particular composition" so as to define their meaning as the artificial ivory or similar material?

A. To the first part of the question, with reference to the names of the inventor as declared in the quotation, I answer yes. To the second part of the question I answer, that from the fact of its being separated from the other by a colon, and not a semicolon, as I understand the marks, I do not regard the last clause as referred to in the question as qualifying the first, but rather related to each other in the form of an antithesis.

22. X Q. Does not the quotation last above referred to declare in effect that this inventor's object was to produce a new article of manufacture stronger than an ivory ring, possessing all the beauty of appearance of an ivory ring, capable of being offered at a very much less cost than an ivory ring?

46 A. It does, provided the ivory composition is the one used for covering the metal ring.

23. X Q. Is there anything in this specification which tells what kind of a composition to use other than the composition patented by Welling August 4th, '57; and, if so, what? I mean, is there any specification sufficiently clear in direction for a manufacturer to make the articles described by using any other than the composition described in the said patent?

A. The words "similar materials" clearly show that the composition is not to be limited exclusively to the composition described in the patent of August 4th, '57; but it is true that no other composition is described in this patent, and for that matter no composition whatever described in the present patent, but simply refers to the previous one to show that something of the nature of the composition be used.

24. X Q. Does not that reference in the body of the patent to the previous patent make the description in that previous patent of the composition referred to a part of this patent?

A. To a certain extent it does.

25. X Q. In the specification of this patent, immediately after the quotation in Q. 15, are the following words: "Ivory rings, particularly such as used for martingales, require to be made out of very solid ivory, in order to be sufficiently strong, and hence are quite costly." Do not these words, taken in connection with the previously-quoted part of the patent, strengthen the construction that the use of artificial ivory or similar materials is the issues of the invention?

A. It does, in so far as relates to the composition, for the reason that at that time martingale-rings were made exclusively of ivory, or of metals or compositions that did not imitate ivory so as to be a proper substitute therefor in the market; and hence the inventor specifies ivory as being one of the substances of greatest importance; but the use of the word' "similar compounds" in said specification clearly indi-
47 cate to my mind that the inventor did not mean to be limited to the ivory composition alone, but to use any composition that would serve for the purpose of making a saleable ring at small cost.

26. X Q. Is it within your knowledge of the state of the art that hard-rubber hollow martingale-rings, made in metallic molds or dies, were sold in the market prior to 1862, or at the date of Welling's invention now in suit?

A. It is not.

27. X Q. The following words succeed the last-named quotations from the patent: "In order to make my improved rings, I take a ring of metal, such as is shown at *a*, or said ring may be formed by punctures round a washer from a sheet of metal, or in any other suitable way; I take the amount of artificial-ivory composition, and by dies or by hand cause the said composition to completely envelop the said ring with as much uniformity as possible, as at *b*, and to give the exterior polish to the same press and solidify the mass or composition around the ring by means of dies, and in so doing any plane or more or less ornamental shape may be given to the said ring or the surface thereof. My ring is thus made of the desired ornamental appearance, while a great strength is attained at a very little cost." Does not the declaration of a patentee, "I take the amount of artificial-ivory composition," &c., strengthen the construction (taken in connection with the preceeding portion of the specification) that the use of artificial ivory is of the issue of the invention?

A. No; I do not regard the use of artificial-ivory or any other composition as of the essence of this invention, and therefore that *the* quotation referred to does not strengthen such a construction of the patent; but on the contrary, from the very fact that in explaining the process of manufacture of his ring, to which the above quotation has referred chiefly, the words "similar materials" previously used are left out in this invention, this rather tends to show that the inventor did
48 not mean to be limited to the use of his ivory compositions alone, but, as he had made a distinction in the previous answers of substances to be used as composition, did not regard it necessary to continue the distinction in describing the process of manufacture.

28. X Q. State whether or not the patent in suit refers to "factitious ivory" in five places.

A. I believe it does, of such form and dimension as to receive the ring, and of such strength as to press and solidify the materials, and so finished as to give the exterior surface of the ring whatever finish is desired to be put upon it. There is no drawing other than the form of the ring to show the shapes of the dies, nor is there any description given in the space *fuatun* describing the construction of the dies, other than that to which I have referred; nor do I deem it necessary in the manufacture of such articles as referred to in this patent that any other description should be given, for the reason that they were well-known devices used in the manufacture of stamped goods prior to said invention; and hence any suitable dies conforming to the shape of the ring would answer the purpose.

29. X Q. Does not the said specification mention "ivory rings" in two other places?

A. It does.

30. X Q. Does not the patent declare that it was the object of the inventor to make a martingale-ring cheaper than an ivory ring?

A. It does.

31. X Q. Then it could not have been the patentee's intention to make rings of a composition which would be costlier than an ivory ring?

A. No.

32. Do you consider the use of dies an essential part of Welling's invention in suit?

A. I do, in the manufacture of rings as described.

33. X Q. What description of dies is there in the Welling patent? Is there any description of the shape or form of a die?

A. The only description given of the dies are such as to press and solidify the mass of composition around the ring, making the ring either plain or more or less ornamental in shape.

34. X Q. Is there any specification in that patent of the form or dimension of the dies or of the material of which dies are made?

A. Only in so far as the specification says that the ring is to be pressed and solidified by means of dies, and in so doing make it plain or more or less ornamental, which evidently shows that the dies must be made.

35. X Q. Do you mean to say in the manufacture of rings that dies were well known prior to the invention in suit?

A. I did not so mean in my answer to include rings, but I believe rings were formed in dies prior to that time, but without metal cores.

36. X Q. Is there anything said in the patent in suit about heating the dies or about softening the composition used, or about putting the dies in a cool press, or about the degree of pressure to be used upon the die?

A. Only in so far as it refers to previous inventions; there is nothing said specifically in this patent containing the matter as asked for in this question.

37. X Q. You entertain the opinion that the patent in suit is for a process of making a ring rather than for the ring itself, do you not? State what you consider that process to be.

49 A. I do not entertain such an opinion, except so far as the use of dies for finishing a ring. The invention, as stated by me heretofore, is for a ring having a metal core covered with this suitable plastic composition when finished by dies.

38. X Q. Then you do consider, do you, that the invention is for the process of making martingale-rings covered with composition by the use of dies, do you not?

A. I do not; neither do I consider that I have so stated it to be the invention.

39. X Q. You have just stated that you consider the invention to be for a ring having a metal core covered with suitable composition when finished by dies. Do you consider that such a ring, when finished without such dies, would be within the scope of this invention and patent?

A. I do not, for I think the inventor has limited himself in this claim to the use of the dies.

40. X 2. Do you consider that he has limited himself to the use of any particular plastic composition?

A. Only such as shall have the solidity and strength of ivory and

be capable of receiving a beautiful finish like ivory or similar substances.

41. X Q. Does not the patent in suit state that the composition is to be applied to the rings by hands or dies; and, if it does so state, is it not optional to use either?

A. It does so state, and therefore is optional to use either, but that description has reference to the first application of the material to the metal ring, for afterward the patent recites the following language: "And, to give the exterior finish to the same, press and solidify the mass of composition around the ring by means of dies, and in so doing any plain or more or less ornamental shape may be given to the said ring or the surface thereof," from which it is evident that it is not optional to finish the ring by hand.

50 42. X Q. Will the composition referred to in the patent in suit solidify and harden without the use of dies?

A. To a certain extent it will, but not so as to give a polished surface.

43. X Q. Is not the composition, before it is softened so as to be molded to the ring, as hard as it is after it is submitted to the die? will it not break like other brittle substances, such as china?

A. It is not as hard when not compressed by dies as without such compression, for the pressure of the dies condenses the composition very considerably. It is true that the material is friable like china, &c., when in a cold state.

44. X Q. Have you seen rings, manufactured like those mentioned in the patent in suit, made; and, if so, when and where, and how were they made?

A. I have. The last time I saw such articles made was this morning, in M'r Welling's factory, 207 Centre street, in this city. The operation performed by placing a composition upon a steam-table and raising it to a temperature sufficiently great to render it somewhat plastic, so that it can be worked by hand, the hand being protected from the heat by thick leather gloves. A mass of sufficient quantity of the material to form a ring is taken from the table and shaped somewhat in the form of a ring. It is then placed in the groove in the dies, said dies having been previously heated to a sufficient temperature to prevent the chilling of the material until it can be placed under the press. Upon the ring of composition so placed in one-half of the die a metal ring is laid, said metal ring having been previously heated, and is then pressed down by hand into the ring of composition so as to imbed it to about one-half the depth of the composition. This action spreads the mass of composition laterally from the metal ring, and the operator then lifts up the edges of the plaster material so spread, and holds it around over the metal core, the die still remaining upon the steam-table. He then places the

51 other half of the die which has also been lying upon the first half and then carries the die or the two parts together to the press, where he brings a pressure of several tons' weight to bear upon it, and then leaves it until the heat of the die and the composition is absorbed to a considerable extent by the press. I have no very good means of ascertaining what degree of pressure was applied better than others, than to examine some presses that had been broken in the process of manufacture, and which had been decided to be too weak for use. I measured one of the frames of said broken presses and found that the cross-section of the cast-iron frame was equal to a piece of metal seven and a half inches wide, by nearly two inches in thickness.

45. X Q. Is the process just described by you described in the Welling patent in suit?

A. Not so minutely as I have described it, but is substantially the same; as the plated material is first applied to the metal ring by hand, and then afterwards finished by means of dies which press and solidify the composition round the metal ring and thereby giving it a beautiful appearance.

46. X Q. If the detailed process described by you be essential to the successful operation of Welling's invention, and if it be not substantially described in the patent, would not the patent, so far as that mode of operation is concerned, be void for insufficient description?

A. It would.

Adjourned to 11 a. m., 9th August.

N. Y., AUGUST 9TH, 1873—11 a. m.

Present, counsel as before.

Cross-examination for the witness Eliot continued by M'r Clayton:

47. X Q. Does not the Benton English patent in evidence describe an iron martingale-ring, covered with a composition chiefly composed of kaolin, (an earthy matter,) applied in a soft state and afterwards hardened by heat?

A. It does.

52 48. X Q. Does not the Newton patent of 1851, put in evidence by compla'nants, describe an iron martingale-ring covered with a composition chiefly of rubber, applied in a plastering condition, and afterwards hardened by heat?

A. It does.

49. X Q. Does not Clark's English patent of 1839, put in evidence, describe a composition chiefly of earthy materials for casting iron articles?

A. It does.

50. X Q. In the Barnwell & Rollison English patent of 1860 is the following passage: "We also make tags, artificial leaves and flowers, and many fancy articles usually made on metal, wood, bone, glass, ivory, china and earthen ware, India rubber, gutta-percha, plaster, and wax, and our process of making such articles is when the nature of the article will admit of such treatment by employing molds in dies of every suitable material for which our composition has no affinity or to which it will not adhere, and casting or pressing out the article from composition in a plastic semi-fluid or fluid state." Does not this passage show that the use of molds or dies for forming or pressing a plastic compound into many articles usually made in ivory, wood, metal, &c., was known prior to Welling's claimed invention in 1862; and, if so, does not this fact limit Welling's invention to the particular composition or its substantial equivalent described in his patent, and present any valid claim to the use of this, irrespective of the composition?

A. No; I think it does not, but rather shows that it was not necessary for Welling to describe any more clearly than he has done the present one of dies to be used in the oporation of making the rings. The information given in the quotation shows that dies for furnishing plastic articles were well known; and inasmuch as said quotation does not describe the method of strengthening such articles by the introduction of an iron core, which, to my mind, is the foundation feature of

53 novelty in the Welling patent in the formation of rings for martingales, I would conclude that such a description rather would go to establish the fact that the Welling patent does sufficiently describe his invention, and the manner of making it, to enable any one skilled in such matters to produce the articles claimed.

The quotation does show, of course, as you say, that dies for forming plastic articles were made prior to Welling's invention, but I do not understand that the claim in the Welling patent is for the use of dies, except so far as necessary in the furnishing of the rings described in said patent.

51. X Q. You have just said that the foundation feature of novelty in the Welling patent is strengthening the composition ring by the introduction of an iron core, or words to that effect. Do you not find the same foundation features of novelty, to wit, an iron core on the rings, respectively described in the Benton patent and Newton patent, in evidence, for strengthening the extra composition?

A. In both of said patents, where iron is used, the articles themselves are formed from the iron, and then to be enameled with the composition like glazing, which must be hardened by fusion, and not by pressure and cooling, and hence the proper distinction to be made between articles produced according to the patents just referred to and the Welling patent is that the one is made of chiefly a plastic substance, strengthened by iron or its equivalent, which will add but little to the weight, and is not strengthened at all in giving shape to the article to be formed, while on the former or the English patents, just referred to, the articles are made of iron, and determine the shape of the article to be produced, and the plastic substance is simply a coating, like paint or glazing, to protect it from the action of the atmosphere.

(Answer objected to as irresponsive and volunteer, and defendant's solicitor states to the witness that he did not ask for ingenious
54 dictations, but merely his opinion upon the evidence of certain features in the several patents referred to, and——

52. X. Q. Cross-question 51 repeated.

A. No; for the articles are made of iron and coated with the composition, and not for the purpose of strengthening.

53. X Q. Does not the strength of the Welling ring, and the Benton ring, and the Newton ring, chiefly depend upon the iron ring enclosed in their respective compositions?

A. It does, chiefly.

54. X Q. Are you acquainted with the process of making lead pipe or an iron core in dies as described in the Tathan patent?

A. I am acquainted with the process of making lead pipe, or an iron core, but I do not remember whether it is according to the Tatham patent.

55. X Q. Is it not a part of your knowledge of the state of the art of manufacturing articles of composition or plastic material that pipes of lead composition have been formed upon iron core by pressure in dies?

A. It is.

56. X Q. In your opinion does Welling's invention include all the known compositions of "similar materials" or "similar compounds," artificial ivory, or compositions equivalent to artificial ivory? Please explain what you understand by the words similar or equivalent in this connection.

A. I understand that any composition is a proper equivalent for the artificial ivory mentioned in the said Welling patent, that, during the process of manufacture or while being applied to the metal ring or core, as furnished thereon, shall be of a plastic nature and of such a character as to be solidified by pressure and ornamented by the action of dies, so as to give it a beautiful appearance; and also that its strength will be increased by the pressure of the dies, so as to make it more durable than it otherwise would be without their use.

55 57. X Q. Do you understand that any composition, such as lead and tin, which would have to be submitted to the intermediate process of melting before it was applied to the iron ring, would be within the Welling patent, if finished by pressure in dies?

A. I think not, for the reason that those materials could only be applied by the additional process of casting, first in molds, and then finished afterwards—a process which is not mentioned in the Welling patent. Nor, further, do I think that it is intended to include the use of articles that could only be applied by the process of casting, such as lead or any of the metals in their metallic state at least.

58. X Q. Do you understand that when the composition, metallic or otherwise, has to be submitted, before it is finished, to melting or casting, or other process not described in the Welling patent, that then such composition is not included in the patent?

A. I do not. I merely referred in my previous answer to the process of casting it or the metal core. So far as I know, in the process of manufacturing such rings quite a number of the materials used in the composition, even in making artificial ivory, are melted during the process of making the composition, and when cool become quite hard and friable. But they are of such a nature that when applied around the metal core to form a ring, they can be applied by hand in a plastic state.

59. X Q. Is it not a fact that it is possible and comparatively easy to take sheets *lead of* alloy, to place them upon a die, to then place an iron ring upon that sheet, and then, by hand or dies, to turn the edges of the sheet over the iron, and then, by means of the upper die and pressure, the dies and lead alloy being heated to form a ring entirely covered, having an iron core and a smooth lead composition exterior, which ring, so far as shape is concerned, will be like the ring in the Welling patent?

A. I believe it is.

56 60. X Q. Would you consider such a ring as an infringement upon the ring claimed by Welling; and, if so, why?

A. I think I would so consider it, for the reason that the material, when applied to the iron core, is of such a character as to be lapped or folded upon the core like plastic material; and also, such material, in order that the process of solidifying by the action of the dies will be complete, must be some alloy of lead, as mentioned in the question, and therefore some kind of composition; and a ring might in such a manner, in my opinion, be produced that would be within the scope of the claim, as I understand it, of the Welling patent.

61. X Q. Would, in your opinion, a ring so made of a composition consisting of two or more metals, without any other element in the composition, be also an infringement?

A. Provided they possessed the properties described as pertaining to the ivory composition recited in the patent, namely, that of being plastic, or capable of being applied to the core readily or substantially in the manner mentioned in the patent, and then of being solidified and finished by pressure.

62. X Q. Then you mean that compositions purely of metal are equivalent to artificial ivory, provided the said metal composition can be and is used to cover an iron ring by means of dies, do you, within the view of the Welling patent?

A. I do.

63. X Q. Suppose that a composition which, after it is reduced to the plastic condition and applied to the iron ring, must first acquire a new

element by exposure to a gas or a solution in order to give the composition the desired character before it is submitted to the die pressure, and suppose such composition to be capable of being strengthened and finished by the dies, would you regard a ring made in this manner as a ring infringing upon the Welling invention?

A. I would.

57 64. X Q. Even though there was introduced into the process of manufacture a necessary intermediate shape or process in no way referred to or described in the Welling patent?

A. Yes, provided all the steps had been taken that are described in the Welling patent for the application of some substance to the composition previous to being acted upon by the dies, as, for example, coloring-matter as a coating, or some such substance, would not, in my opinion, take it out of the scope of Welling's invention.

65. X Q. You have said that you regarded the use of dies an essential part of Welling's invention. Now, Welling's patent uses dies for a double purpose: first, to form the plastic composition around and upon the iron ring; and secondly, to finish it with a heavy pressure. In your opinion, would a ring made by dies used only for the finishing pressure be an infringement upon the Welling patent?

A. It would, for the simple reason that the specification describes the process of applying the plastic composition as being performed by dies or by hand, and then the finishing is to be performed by dies.

66. X Q. If the composition be applied to the ring in a different manner than that described in the patent, by dipping, for instance, would a ring finished in this respect, as described in the patent, be an infringement?

A. It is difficult for me to answer the question definitely without knowing the other processes referred to. I can conceive that a composition may be made and applied to the ring by dipping the iron core therein repeatedly until a coating was formed upon the said core that would possess, in my opinion, all the properties of a plastic composition necessary to make the article such a one as that the finishing of it by dies, pressing and solidifying it as well as ornamenting it, would bring it within the claim of the Welling patent.

65. X Q. Would an iron ring, covered with a plastic composi-
58 tion which was finished without the use of any finishing dies, be an infringement upon the Welling patent?

A. I believe I have already said that I thought it would not, and I still think so.

66. X Q. Can Welling, by following the instructions in his patent, make a ring with the composition described in the Albright patent and used by defendants in making rings like Exhibit 4, without the use of another process in no way referred to in the Welling patent?

A. Not alone, for the reason the process of vulcanization is not described in the Welling patent.

67. X Q. Suppose that you were to take a suitable quantity of the soft rubber composition used by defendants and apply it to a ring and press it in dies as described in Welling's patent, without the use of the process of vulcanization, what would be the result? Would it or not make a marketable ring?

A. It would not.

68. X Q. Then the Welling process is not adapted to the manufacture of rings like defendants', is it?

A. It is, and is also what may be regarded as an additional improvement upon the process described in the Welling patent. The process of

vulcanization, however, was well known prior to either the Welling and Albright patents.

69. X Q. Does not the fact that in defendants' process, when dies are used at all, that the dies are applied to the vulcanized rubber, which is a hard substance, lead you to the conclusion that there is no infringement upon the Welling process, in which the dies are applied to the material in a plastic condition?

A. The question, in my opinion, assumes two errors: first, that the rubber is hard when acted upon by the dies, and second, that the plastic material is soft when the operation of finishing is completed, whereas the fact is that both substances during the process of completion are in a sufficiently soft state to receive the impressions of the dies, and in a sufficiently hard or solid state to retain their impression when
59 the dies are removed, and therefore the finishing by dies is substantially the same, in my opinion, and of course within the scope of Welling's patent.

70. X Q. You have stated, in effect, that there is nothing in the Welling patent about dies with a sharp cutting-edge to cut off the waste. If, then, it be a fact that the use of dies with such edges is essential to the successful manufacture of the Welling ring, and there be no such edges described in the patent, is not the patent void for insufficiency of description?

A. I suppose it would be, if the suppositions stated in the question are all correct.

71. X Q. Do you agree with M'r Welling in the statement made in his answer to the 33d recross-question, when he said, "You can't make a good ring without a sharp cutting-edge?"

A. In one sense I do, and in another I do not. In the formation of the dies made to correspond to the rings as he uses them there are grooves formed in the face of the plate corresponding to one-half of the ring, and this construction, being made in the face of a smooth or flat plate of steel, necessitates the provision of spaces also being formed in the die outside and inside of the grooves that form the ring, into which surplus material not required in the formation of the ring escapes or is driven under the action of the press, and as it is necessary that these spaces shall be as close as possible to the groove that forms the ring, it makes the surface of the metal of the die between the groove and the spaces very narrow, and consequently like a cutting-edge, and said edges also serve to sever the surplus material from the finished ring as the two parts of the die close upon each other, and in this way cutting-edges are furnished to the die. But a die may be formed with only one groove in each half, the surplus metal being cut away on both sides of the groove so as to allow the material to escape, which would dispense with the outer and inner grooves to which I have referred as being in the
60 dies which he now uses, but in such a case the press would have to be constructed so as to close the dies upon each other, and no more, or else the surfaces of the dies would soon be crushed, one upon the other, and the cross-section of the ring would become flattened or oval-shaped, instead of circular as represented in the patent.

72. X Q. Is it not just as possible to make a die having only one semi-circular annular groove in each half without having any portion of the metal cut away?

A. It would not operate in forming such rings, for there must be a place of escape provided for the surplus material, and this place must come up to or in close proximity with the groove on which the ring is formed, otherwise the waste material would be caught between the sur-

faces of the die so that they could not be closed, and the ring would be formed with a fin all around it, or a rib, both internally and externally.

73. X Q. Question repeated, without the assumption that there must be room for the escape of the waste material.

A. So far as simply making dies is concerned, it is possible; but it is just as impossible to make it a practical die for the purpose as it is absolutely necessary that there must be some place for the escape of the waste material.

74. X Q. What warrant do you find in the Welling patent for the assumption that there must be more composition applied to the metal ring than is necessary for the finished ring?

A. There is nothing said in the patent requiring any more material to be used than will form the ring, and if just so much be selected of the mass of composition as will fill the die, and no more, when the ring is completed, then the grooves to which I have referred might be dispensed with.

75. X Q. M'r Welling, in answer to recross-question 35, states that he makes his rings in the following manner: "We take a piece of com-
61 position about the size for a ring, we lay it on a steam-table, when it is softened by heat; we then put the composition into a hot die, press in an iron ring, turn up the edges of the composition over the part of the iron ring left uncovered, put on the other half of the die, and put it into a cold press. The moment the cold from the press strikes the composition it begins to harden, and hardens so fast that it requires a heavy pressure to bring the two halves of the die together so that they will cut off." In your opinion, is this detailed process in all its several stages substantially set forth in the Welling patent?

A. It is, when taken in connection with the state of the art at the time of the invention, and to be put in operation by workmen skilled in such matters.

76. X Q. Can you give any authority for the statement that the use of a hot die in a cold press on a composition which hardens in a heated die by the action of the cold from the press was known in the arts?

A. For an example, vulcanized rubber was molded in various forms after it is vulcanized, which required the use of hot dies, and said dies were not removed until the dies and material both had become comparatively cold; so also the composition referred to in one of the English patents in evidence would require a similar treatment.

77. X Q. In your opinion, is the process described in the quotation made on question 75 necessary in order to manufacture the Welling rings according to the Welling patent?

A. Substantially so.

78. X Q. Do you consider that the Welling patent covers any kind of a martingale-ring covered with composition of any kind, irrespective of the manner in which the composition is applied and finished?

A. I do not.

79. X Q. The 41st recross question and answer in Welling's
62 deposition for complainant are as follows: "41. Re-X. Do you claim that the black and red martingale-rings, and that all metallic harness rings covered with composition of any kind are subject to your patent of 1863? Ans. I do, most certainly."

Q. Do you agree with the answer of the defendant?

A. I do, provided they are finished by dies.

JOHN BOYD ELIOT.

Sworn to before me this 9th day of Aug., 1873.

JOSEPH GUTMAN, J'R.,
Examiner, &c.

63

64 Circuit court of the United States, district of New Jersey. In equity.

WILLIAM L. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING COMpany, Andrew Albright, and L. C. Voorheis.

Proofs taken on the part of the defendants under and pursuant to the 67th rule in equity, before Joseph Gutman, j'r, examiner.

NEW YORK, *June* 28, 1873—11 a. m.

Present, J. C. Clayton, esq., counsel for defendants, and F. H. Betts, esq., counsel for complainant.

Defendants' counsel offers in evidence certified copies from the bound volumes of the library of the Patent-Office of the United States of the specifications of the following English letters-patent, to wit:

1. Letters patent granted to Alfred V. Newton, dated March 4, 1851, No. 13542, for composition applicable to the manufacture of buttons, knife and razor-handles, door-knobs, inkstands, &c.

It is marked "Defendants' English Patent, Exhibit No. 1."

2. Letters-patent granted to Charles H. Paris, dated January 23, 1849, No. 12437, for preventing oxydation of iron.

It is marked "Defendants' English Patent, Exhibit No. 2."

3. Letters-patent granted to Thomas and Charles Clark, dated May 25, 1839, No. 8080, for glazing and enamelling cast-iron, hollow-ware, &c.

It is marked "Defendants' English Patent, Exhibit No. 3."

65 4. English letters-patent granted to Edward Barnton, dated October 5, 1843, No. 9888, for improvements in saddle and horse harness.

It is marked "Defendants' English Patent, Exhibit No. 4."

5. English letters-patent granted to Charles Edwin Mayall, dated October 24, 1855, No. 2381, for improvements in photography.

It is marked "Defendants' English Patent, Exhibit No. 5."

6. English letters-patent granted to Stephen Barnwell and Alexander Rollison, dated September 15, 1860, No. 2249, for improvements in articles which may be used as paints and varnishes.

It is marked "Defendants' English Patent, Exhibit No. 6."

It is stipulated by the respective counsel that the time to take testimony be extended for the defendants to and including July 15, 1873, and for complainant to and including August 1, 1873.

JOSEPH GUTMAN, J'R,
Examiner.

JULY 9TH, 1873—2 p. m.

Examination resumed.

Present, as before, counsel for the respective parties.

WILLIAM M. WELLING, a witness called on the part of the defendants, being examined by M'r Clayton, counsel for defendants, deposes and says:

Q. 1. You are the patentee under whose patent this suit is brought?

A. Yes, sir.

Q. 2. When did you first make and sell martingale-rings covered with this composition?

A. Spring of 1862—April. I think that was the first I sold.

66 Q. 3. Did you not make and sell such rings as early as the spring of 1860?

A. I think not.

Q. 4. Describe exactly the manner in which such rings first made by you were made.

A. I took a piece of composition, of about the weight required for a ring, made soft on a steam-table, then rolled out in length about the length of two fingers; laid it in a hot steel die; then I took a hot iron ring and pressed it into the soft composition that was in the die; then the composition enveloped most of the iron ring; the balance of the iron ring uncovered was finished by pressing the composition over the part of the ring that was uncovered; then the other die, forming the other half of the ring, was placed on the top; the two halves laid together, with the ring in it, were put under a press, and a fine surface was brought to the surface of the ring by the pressure and polish of the dies. Well, the ring was put on a wooden pin, and a feather edge scraped off with a tool; they can be either left that way or polished over.

Q. 5. Does that description just given describe the manner in which you now make them and claim to sell under your patent?

A. It does.

Q. 6. What is the composition used under your patent now in suit?

A. I claim all compositions for covering martingale-rings or rings for harness.

Q. 7. What compositions have you used in covering rings since the date of the patent now in suit?

A. Well, I have used different compositions. I have used rubber and other compositions. I used ivory-dust, talc, kaolin, asbestos, rubber, wood-dust, and cotton fibres; each substance with gum shellac, tar and copal, and wood fibre; also paper.

Q. 8. What composition do you now use in covering martingale-rings, in accordance with the patent now in suit?

A. I use white shellac for white rings, and brown shellac for fancy-colored and black rings; kaolin, cotton or wool fibre, lamp-black,

67 camphor, and small quantity of linseed-oil, a few drops; the oil is used in case the material does not mix well, and may be left out.

Q. 9. In your patent in suit you have referred to dies for making the composition conform to the shape of the ring; do you now use dies for the purpose, as specified, or is the composition applied without dies?

A. I have always used dies and cannot make rings without them.

Q. 10. When did you first have knowledge that such compositions as you have described had been pressed in dies for the purpose of forming other articles than rings?

A. I think it was in 1856.

Q. 11. What articles about that time did you see formed out of such compositions by the use of dies?

A. Articles that I manufactured—billiard balls, checks, black keys for pianos, bagatelle balls.

Q. 1 . Did you, about that time or shortly afterwards, see such articles of those compositions pressed with dies by others than yourself or your workmen?

A. I did not.

71 A. All I know is what the patent says.

Adjourned to Friday, 11th July, 2 p. m.

W. M. WELLING.

Sworn to before me.

JOSEPH GUTMAN, J'R,
Examiner, &c.

In the circuit court of the U. S. for the district of New Jersey. In equity.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company and Andrew Albright and Luther C. Voorheis.

Testimony for defendants.

UNITED STATES OF AMERICA,
District of Columbia, County of Washington, ss:

Be it remembered that on this first day of August, in the year of our Lord one thousand eight hundred and seventy-three, I, Edmund F. Brown, a commissioner of the United States for the District of Columbia, under all the several acts of Congress, providing for and authorizing the appointment of commissioners, and prescribing the powers
72 and duties of the same, duly appointed by the supreme court of the District of Columbia, did call and cause to be and personally appear before me, at the Irving House, in the city of Washington, in said District, Andrew Albright and Benjamin S. Hedrick, to testify and the truth to say, on the part and behalf of the defendants, in a certain suit or matter of controversy, now depending and undetermined in the circuit court of the United States for the district of New Jersey, wherein William M. Welling is plaintiff, and The Rubber-Coated Harness Trimming Company and Andrew Albright and Luther C. Voorheis are defendants, when the following proceedings were had, viz:

ANDREW ALBRIGHT, being duly sworn, doth depose and say as follows, in answer to interrogatories by Joseph C. Clayton, esq., counsel for defendants:

1st int. Please state your name, and whether or not you are one of the defendants in this cause.

Answer. My name is Andrew Albright, and I am one of the defendants in this cause.

2d int Produce one of the metallic rings covered with hard rubber, made by the defendants.

(Witness here produced a ring, which is marked "Defendants' Exhibit No. 10," and put in evidence.

Defendants' solicitor offers in evidence certified copies of the U. S. letters-patent granted to Andrew Albright, February 12, 1867, for improvement in covering harness-trimmings with vulcanized rubber, marked "Exhibit ."

Also, certified copies of re-issued letters-patent No. 5155, 5156, granted to Andrew Albright, 26th November, 1872, marked "Exhibit ."

Also, re issued letters patent No. 5172 and 5173, granted to Andrew Albright, December 3, 1872, marked "Exhibit ."

Also, offers in evidence the original model in the matter of the application of S. G. Welling, assignee of William M. Welling, for a
73 patent for improvement in rings for martingales, filed in the Patent-Office April 29, 1862, marked "Exhibit ."

Defendants' solicitor states that the model above referred to, or a duly-certified copy thereof, will be produced at the hearing.)

3d int. (Defendants' solicitor here hands to the witness the model just referred to, and Exhibit No. 10, and says:) Will you please, with your knife, test and describe the character of the substance with which the metal is coated in those exhibits?

(Counsel for complainant objects, that no evidence has been introduced to show the witness is competent to answer the question.)

Answer. Upon testing Welling's model, I find that it has the appearance and quality of a composition composed of plaster-of-Paris, shellac, and ivory-dust; that it is brittle and crumbly like clay or plaster; in color, a dingy gray. It possesses but little beauty of finish, and a small amount of utility or merit in actual use; liable to be broken or cracked off from the metal core while in actual use. An article of small value in its class in the market. Upon examination of Exhibit No. 10, I find the material coating the metal ring to be hard or vulcanized India rubber, which is elastic while it is hard, possessing great strength and durability while in actual use. It is tough like horn, without any pores or fibre, susceptible of receiving a fine finish, and in color a glossy black.

4th int. In your examination by the complainant some weeks ago, you stated that about two years ago you began to use metallic dies in making rubber-coated rings. Please state the object in the use of such dies.

Answer. The die was made to cheapen the cost in production of the goods.

5th int. You also stated that before defendants began to use such dies, the rings covered with the plastic rubber were cured in soap-stone, or in moulds. Please state what was the object of the soap-stone, or of the moulds.

74 Answer. The process of curing or vulcanizing hard rubber has been, from the earliest production of hard-rubber goods, for the last twenty years, made by the use of moulds or packing of soap stone, or wrappings of cloth around the outside of the plastic gum or rubber for the purpose of keeping the natural shape or form desired, while submitted to the long and in some cases high temperature in which they may be cured or vulcanized. The object of a mould or packing is for the purpose only to preserve the shape or form desired, made or formed while the gum is plastic, as the high degrees of heat to which it is submitted will cause it to flow or run, unless a mould or packing is used.

6th int. How long have you known of metallic martingale-rings covered with any composition, and to what extent has such rings been used?

Answer. The first metallic ring I remember to have seen, on which there was a coating of composition, known as japan, is at least twenty-five years ago. I may safely answer to the extent of thousands of gross, from that up to the present time.

Cross-examination suspended.

For cross-examination, see page . E. F. B.

BENJAMIN S. HEDRICK, being duly sworn, doth depose and say as follows, in answer to interrogatories by J. C. Clayton, esq., counsel for defendants:

1st int. What is your name, age, residence, and occupation?

Answer. My name is Benjamin S. Hedrick. My age is forty six years. My residence, District of Columbia. My occupation, a principal examiner in the U. S. Patent-Office, in charge of the class of chemical arts and metallurgy.

2nd int. Please state what have been your pursuits during the last fifteen years; and, also, whether or not you have been examined as an expert witness in patent causes.

Answer. For the last twelve years I have been an examiner
75 in the Patent-Office; before that I was professor of chemistry in several institutions of learning. I have been examined several times during the last five years as an expert in patent causes.

3d int. State whether or not you have ever been examined as such witness in any suit relating to rubber manufactures; and if so, what suits?

Answer. I have not.

4th int. Is it a part of your duty, as an examiner in the Patent Office, to consider and act upon applications relating to the manufacture of rubber goods and artificial ivory?

Answer. It is; and I have examined and acted upon all the leading patents in this branch of industry.

5th int. Have you read, and do you understand, the Welling patent of March 17, 1863, under which this suit is brought, and the patents granted to Andrew Albright, and put in evidence during this examination this morning?

Answer. I have read them and understand them.

6th int. What was the state of the art relating to martingale-rings prior to 1862?

(Complainant's counsel objects, that no evidence has been introduced showing that witness has examined the nature of the art, except as shown in patents mentioned in the 5th interrogatory.)

Answer. They were made of ivory of various compositions known as artificial or factitious, or imitation ivory, of metal coated with varnish, lacquer, japan, enamel, porcelain, metallic-plating, compounds of rubber and gutta percha, and with leather.

6th (a) int. Have you read or heard read the deposition of defendant, Albright, when examined as a witness by the complainant, in which he described the mode by which defendants manufacture "rubber-coated martingale-rings?"

Answer. I have.

7th int. When did you first have knowledge from your acquaintance with the state of the arts, of what is known as artificial ivory?

76 Answer. I cannot tell. The substance known as artificial ivory has been long known and used in the arts, and has frequently been described in patents, both in this country and in Europe, certainly for more than twenty years.

8th int. Was the coating of martingale-rings with plastic composition known to the arts prior to 1860; and if so, what, if any, records are there of such knowledge?

Answer. It was; one giving a hard, brittle covering when finished is described in English patent to Edward Banton, dated October 5th, 1843, No. 9888, which has been offered in evidence in this case. Another plastic composition of rubber and gutta-percha in the English patent of Moses Poole, of March 30, 1853, No. . Another in the English patent of Barnwell & Rolldson, of September 15, 1860, No. 2249.

9th int. "Welling Model, Exhibit ," and Exhibit No. 10, are here handed to the witness and he is requested, by inspection and with a knife,

to test and describe the character and quality of the coatings of the two exhibits in respect to their physical appearance and quality, similarity and dissimilarity.

Answer. The Welling model shows an iron ring covered with a composition belonging to the class of compounds known as artificial ivory. It is hard, brittle, and friable. When cut with a knife it crumbles into powder. It differs very little in appearance from what is known as enamel, and closely resembles clay or plaster. Its structure is granular, and is made of earthy materials held together by some kind of cement. It is not as hard as enamel, but is harder than ordinary plaster, and would be fairly called an artificial ivory. The color is a dingy white, and the general character more nearly resembles earthenware than anything I can think of at present. It is too brittle to give any additional strength to the iron ring, and would not possess much value as a material for forming martingale-rings without the iron core. In this respect it is not equal to good porcelain; and with the iron core for strengthening it, would not be preferred to a similar ring covered with enamel,
77 except that it somewhat resembles ivory, and therefore, as a substitute for ivory, has some value and importance.

(Complainant's counsel objects to that part of the witness's answer which refers to the strength of the artificial ivory when used for martingale-rings, he not having shown that he has ever tested the strength in practical use, and not being examined as an expert in the wear and tear of harness, but only in the art of forming the materials.)

As regards Exhibit No. 10, I have compared it with the original model, filed by Andrew Albright in the U. S. Patent-Office, January 23d, 1867, preparatory to obtaining the patent issued to him, and dated February 12, 1867. I find this exhibit to be composed of a metallic ring, covered with a thick coating of the material known in the arts as vulcanized hard rubber, said material being the same as shown in Albright's model, above mentioned. This material is of a jet black color, hard, tough, elastic, is not granular in its structure, is uniform throughout in its texture, and when cut with a knife comes off in tough shavings, not brittle or friable. It has no resemblance whatever to artificial ivory, but more resembles very hard leather, and would form a good imitation as to its looks, of what is known as patent or enameled leather, but is stronger and more durable than any leather with which I am acquainted. The material with which this exhibit is covered is a good article of vulcanized hard rubber. It is harder and stronger than leather, has no tendency to crack or granulate, and in that respect is entirely different from the Welling model, which forms fissures in drying, and is so brittle that it almost crumbles under the action of the finger-nail after it is started or broken. The Welling model, in its appearance, shows a not very good imitation of ivory. The Albright Exhibit No. 10 shows a very good imitation of a ring covered with enamel leather; the imitation, however, being far superior to the thing imitated, inasmuch as hard rubber is stronger, tougher, harder and more durable than leather.

78 10th int. What do you understand to be the invention described in Welling's patent of March 19, 1863, under which this suit is brought?

Answer. It is for a martingale-ring intended to imitate, as near as possible, an ivory ring with a composition, such as is described in Welling's patent of 1867, for artificial ivory, or some similar compound; that is, some other composition suitable for forming artificial ivory, equivalent to that described in Welling's patent of 1857, many such compounds

being known, some earlier and some later than 1857; one such being described in the English patent of John Edwin Mavall, dated October 24th, 1855, No. 2381, being filed as Exhibit No. 5, J. G., j'r, and another being referred to in the same patent, not to cover martingale-rings, but it is a "similar compound," such as named in Welling's patent of March 17, 1863.

(Complainant's counsel objects to so much of the answer of the witness as relates to Pinson's invention, the same not being in evidence; and also to all of the answer that refers to the construction of Welling's patent, the same being matter of law for the court, and not of fact for the witness.)

11th int. State whether or not any part of Welling's invention, as described in the above referred to patent, is used in making goods, as described by M'r Albright, in his examination by the complainant.

(Objected to as calling for the construction of Welling's patent, and as witness has not shown an acquaintance with the uses of Welling's patent, that will warrant a competent answer.)

Answer. There is not, for the reason that a necessary thing in making the article described and claimed in Welling's patent of March 17, 1863, is an artificial ivory, either such as it described in his patent of 1857, or some "similar compound;" and Albright uses no such element in making goods such as are described in his testimony referred to in the
79 question. Albright's articles do not imitate or resemble ivory in any respect whatever. Were Welling's claim or invention construed broad enough to cover a martingale-ring, made by surrounding a metal ring with any and all plastic compounds which would form a hard coating or shell, it would have been lacking in novelty. The object of Welling's invention, as clearly stated in his specification, as I understand it, was to give strength and durability to martingale-rings made to imitate natural ivory. He states the nature of his invention to consist in the employment of a metallic ring, covered with artificial ivory or similar material, for giving strength to the same.

(Same objection to answer.)

12th int. What was the chief ingredient of the lacquer or japanned composition for covering martingale-rings known to the art prior to 1860?

Answer. Various spirit varnishes, such as a solution of shellac, asphaltum, and drying-oil.

13th int. Describe and distinguish the two substances known to the art as artificial ivory and hard rubber.

Answer. Artificial ivory is formed of a great variety of materials, but the leading elements are a solid earthy material, such as ivory-dust, pulverized bones, horn-shavings, various white earths, such as kaolin, (china-clay,) metallic oxides, such as oxides of zinc, infusorial earth, tripoli, mixed with some cementitious or binding material, such as glue, gelatine, albumen, or other like material, which can be formed into a liquid or a semi-liquid, so as to form a dough or paste with the solid materials above named. Other materials to change the color or consistency of the mass are sometimes added. Hard rubber is formed of gum caoutchouc or India rubber, or other vulcanizable gum and sulphur, heated up to what is called the vulcanizing temperature during the proper time. Other substances are sometimes added to change the color or cheapen the article. The difference between hard rubber and artificial ivory is similar to the difference between the very hardest leather and natural ivory. Artificial ivory is more brittle and less elastic and less tough than natural ivory, and apparently somewhat

80 like in hardness to the enamel used for covering iron; such enamels generally having in their composition bone-earth, china-clay, and other similar earths used in making artificial ivory. The enamels have not the cement or liquid part of the artificial ivory, the solid portions being joined together by fusible material, and sometimes covered with a glaze. Hard rubber is much harder than leather, but shows, when polished, a surface similar to enamelled or patent leather, and also to the natural material known as jet.

Cross-examination by M'r Betts, counsel for complainant:

14th X Q. Look at your answer to the 4th interrogatory, and state in what capacity you have examined and acted upon all the leading patents in the manufacture of rubber goods and artificial ivory, whether as examiner or as expert.

Answer. As both, I would say. As examiner I had to report on the original Goodyear hard-rubber patent, and the several patents of L. O. P. Myer, the patent of Austin G. Day, T. J. Mayall, and some others, when application was made for their extension. Some of these I examined for re-issues. I examined as an expert, by direction of the Commissioner of Patents, in 1868, a rubber factory near Chester, Penn., and one at College Point, New York. I examined all the exhibits and testimony in applications for extension of patent for rubber manufactures filed in the Patent-Office during the last twelve years. In artificial ivory I examined the application for the extension of the patent of W'm M. Welling, No. 17949, August 4, 1857; and I have granted about 18 or 20 patents to various parties for improvements in the manufacture of artificial ivory, and a large number of applications for improvements in rubber manufacture.

15th X Q. In how many cases of patents relating to compositions other than hard rubber have you been engaged as expert?

Answer. I think in only three or four patent suits.

81 16th X Q. Do you appear in this case only as a witness as to what you have noticed or studied in your experience, or are you regularly retained as an expert?

Answer. I am not regularly retained. I was employed as a witness in this case yesterday morning, and get paid for my time. I should have gone to New Jersey to be examined, but could not well leave the city now on account of official duties.

17th X Q. Have you given the subject of this suit and the matters to which you have testified any further study or attention than that which you had given them prior to being called as a witness?

Answer. I have. Since yesterday morning I have gathered together a large quantity of material accumulated during examinations and researches of matters and things relating to these subjects during many years past, and I have read over and studied the several exhibits, patents, testimony, and other papers submitted to me by counsel for defendants in this suit.

18th X Q. In what respect, then, does your appearance as a witness differ from retainer as an expert?

Answer. None, that I know of, except that I was not retained until yesterday morning, when the papers were placed in my hands.

19th X Q. How much has been agreed to be paid you for your services?

(Objected to as immaterial, irrelevant, and impertinent.)

Answer. I have been paid $100.

X Q. 20th. Are you acquainted, as an expert, with all kinds and styles of artificial ivory?

Answer. I have not seen all; I have seen all kinds which have come into use here.

21st X Q. Is it not a quality of all kinds and styles with which you are acquainted to be granular and made of earthy materials held together by cement, and when cut with a knife to shave off into a powder?

Answer. It is.

X Q. 22d. Have you so thoroughly studied and made yourself
82 master of inventions relating to compositions other than hard rubber, and made prior to M'r Welling's patent, and referred to in your answers, as to make you competent as an expert in, and thoroughly conversant with, all matters relating to those inventions?

Answer. I have, as to what I have testified. I do not pretend to say that is all that has been known or can be known about them.

X Q. 23d. Are you well enough acquainted with the patents which you have referred to as anticipating Welling's inventions as to be thoroughly acquainted with their subject-matter, and competent to testify thereto of your own knowledge?

Answer. I never said that Welling's invention as described in his patent of 1863 was anticipated. I did, however, say in substance that if so broad a construction is given to the claim as to cover a thing so totally different from the thing described in Welling's specification, and shown in his model, as from the articles made by covering harness-trimmings with hard rubber, as shown in Exhibit No. 10, then the patent would not be valid for want of novelty, since the exhibits filed already in this case show that it was not new two years before the date of Welling's application to make a martingale-ring by covering a metallic ring with a shell of plastic material, which could be molded or pressed thereupon and afterwards hardened. I am well acquainted with the subject-matters of which I have testified, and, so far as it may be lawful for a man to judge himself, I consider that I am qualified to testify, but am willing to leave the whole matter to those who are competent to judge of it.

B. S. HEDRICK.

Sworn to and subscribed before me this 1st day of August, 1873.

EDM'D F. BROWN,
U. S. Commissioner.

Cross-examination of M'r Albright by counsel for complainant:

X Q. 7th. How many gross of rings do you manufacture in a month like Exhibit 10?

83 Answer. That is a question I cannot answer correctly, for this reason: We do not manufacture those rings in any large quantities in any one month, and do not manufacture any during some months' time in succession. We have sometimes made as many as three thousand rings in one month, which would be enough to supply orders for some time. When we found ourselves running short of stock in rings we would make more.

X Q. 8th. Do the rings finished by you with dies, or those finished without dies, constitute the majority of those manufactured by you?

Answer. All rings made by us during the last 2½ years which we term or name and sell to the trade, known as martingale rings, are finished without the use of a die or mold, and are not the same as Exhibit No. 10, having a loop in which to sew the strap or leather martingale. The ring Exhibit No. 10 is what we sell to and is known by the trade as

breeching-rings, and which constitute a very large majority in manufacture and sales—as great as ten to one. All rings like Exhibit No. 10 are pressed up, after being vulcanized or hardened, by the use of a die.

X Q. 9th. What is the difference in expense between breeching-rings like Exhibit No. 10 and rings [made without use of] dies?

Answer. Our martingale-rings are at least double the expense.

X Q. 10th. Can you state how much of that additional expense arises from the loop to which the martingale strap is attached?

Answer. I could not exactly, but about one-third.

X Q. 11th. Is the saving of expense your only reason for using dies in the manufacture of breeching-rings?

Answer. It is not.

X Q. 12th. What other reasons have you for using them?

Answer. To make the ring more perfect, and have the appearance of a ring covered with patent leather sewed on on the outer rim with thread.

X Q. 13th. What do you mean by "more perfect?"

84 Answer. Giving the rubber an equal thickness on all portions of the iron or metal, having the appearance of an article with a high finish, symmetrical in all its proportions.

X Q. 14th. Is that all you mean by "more perfect?"

Answer. No; the greater perfection the greater the beauty and more desirable becomes the ring as an article of trade.

X Q. 15th. Do you mean anything else by "more perfect?"

Answer. Yes; the more beautiful and perfect that a ring can be made in combination with strength and durability the higher prices can be obtained in the market.

X Q. 16th. How does the use of dies affect the "strength and durability" of rings made with them?

Answer. I don't know as they add to or detract from the "strength and durability" of rings made with them.

X Q. 17th. Is your answer to cross-question 15 in relation to its strength and durability only a general remark that does not apply in particular to breeching-rings?

Answer. It does not.

X Q. 18th. Cross-question 15 repeated.

Answer. I mean where an article can be manufactured in a manner that shall present to the eye of the purchaser the highest perfection in artistic skill, while at the same time you do not destroy the strength and utility that you would have in an article of the same class that should be poorly finished, the greater is your encouragement and reward for your pains and labor in the manufacture of such goods.

X Q. 19th. Look at your answer to cross-question 15 and state whether or not the results or benefits or qualities there mentioned, or any of them, are imparted to breeching-rings by dies?

Answer. The use of the dies is only desirable so far as the surface-finish is desired, or that part that is presented to the eye of the individual purchaser. The dies do not add to the strength or durability of the ring, in my opinion.

85 X Q. 20th. Look at answer to cross-question 13, and explain how the dies give the rubber an equal thickness on the iron or metal at all portions.

Answer. During the process of covering the ring with plastic rubber, an unequal surface may sometimes be given to the ring, and remain there during the vulcanizing of the rubber; those uneven surfaces are forced down or upset and distributed on other portions of the ring where

there may have been a cavity caused by a mistake in applying the plastic gum.

X Q. 21st. Do the dies act only upon rings having accidental cavities? If not, what is the result of their action ordinarily?

Answer. There is no perfection in any ring on the outer surface after having been vulcanized, the outer surface being more or less uneven, from the thirty-second part of an inch up to one hundredth part of an inch, from the fact that there is a slight variation in the metal rings, in size and thickness, and also in the thickness of the plastic rubber when applied as a coating to the ring; and when the ring is soft enough, from the effect of the heat, the use of the die causes the ring to become, on the outer surface, even, and to fill the die in all its bearings.

X Q. 22d. When the ring is ready for application to the die, is it always just large enough, and no more and no less, to fill the die?

Answer. No; sometimes too small, sometimes too large.

X Q. 23d. What is the usual case?

Answer. We always endeavor to get the ring so near the size to just fill the die, and not have any superfluous stock.

X Q. 24th. Do you generally succeed?

Answer. We do, for we guage the metal ring as to thickness, and we guage the rubber to the 64th part of an inch before applying it to the ring.

X Q. 25th. When the ring is larger than the die what becomes of the extra rubber?

86 Answer. We put the ring on a mandril and turn off the excess of stock; and when too small we finish the ring without the use of a die.

ANDREW ALBRIGHT.

Sworn to and subscribed before me this 1st day of August, 1873.

(Signed) EDWIN F. BROWN,
U. S. Commissioner.

By consent, further cross-examination is suspended to 10 a. m. Tuesday, the 5th of August instant, at the office of J. C. Clayton, in New York City.

It is consented that defendants may have three hours or less on Tuesday next to examine witnesses in relation to the use, sale, price, and relative value of the different kinds of martingale-rings which are now in market.

E. F. B., *Commissioner.*

N. Y., AUGUST 5, 1873—10 a. m.

Present, Mr. Clayton, counsel for defendants, pursuant to adjournment of August 1st.

At request of complainant's counsel, by telegram, examination adjourned to August 6, 1873, at 1 p. m.

JOSEPH GUTMAN, J'R,
Examiner.

NEW YORK, *Aug. 6th*, 1873—1 p. m.

Counsel present, Mr. G. W. Betts for the complainant; Mr. J. C. Clayton for the defendants.

87 Cross-examination of the witness Albright resumed by M'r Betts:

X Q. 26. M'r Albright, look at the answer to X Q. 14, which gives as a meaning for "more perfect," quoted from the answer to 12th X Q., "perfection and beauty," and look also to the answer to 19th X Q, stating that strength and durability are not, in your opinion, imparted to a ring by the use of dies; and then looking at 15th X Q., namely, "Do you mean anything else by more perfect?" state to what, in addition, the answer "yes" refers?

A. I wish to convey the idea that where you can, by the use of a die, cause to be given to the exterior surface of the ring a higher artistic finish to the greater degree of perfection to which the article may be brought, while at the same time you shall not destroy the strength and durability existing in the ring prior to the use of the die.

X Q. 27. Are you well acquainted with all the testimony given in this case by yourself at the last examination?

A. I could not repeat it without first reading it, and then not verbatim.

X Q. 28. Look, if necessary, at your testimony and state whether you have given all and every reason for your use of dies in the manufacture of breeching rings?

A. In perusing my testimony I find that I have endeavored to as distinctly convey the purposes for which we make and use a die in the manufacture of breeching rings and other goods wherein a die may be used.

X Q. 29. Answer, yes or no, whether you have stated not only the purposes but all the purposes, according to the last question?

A. I do not wish to answer separately and distinctly, in the literal sense of the meaning of the words yes or no, for this reason: there may be some particular things that would materially benefit us in the use of a die that are unknown to me to-day; on the other hand, the use of a die may be very injurious to us financially in the manufacture of the goods. I find that oftentimes some new feature is brought to
88 light by the use of tools or moulds or dies with which we had supposed ourselves perfectly familiar in their many and varied uses, but in the manipulation to which we are many times forced from the want of knowledge, experimentally, to make many experiments with an object of producing a new process or way by which we may arrive at greater perfection, and at less cost.

X Q. 30. Is that all you have to say in answer to the question?

Question repeated.

A. I have endeavored to convey fully and explicitly a satisfactory answer to the question given.

X Q. 31. Do you refuse to answer the question as given?

A. I cannot answer a question while in ignorance as to the fact or point the counsel may demand in this question.

(Counsel for complainant states to witness that he wishes to know every and all reasons which he may have for the use of dies in the manufacture of breeching rings, excluding all that he may himself be ignorant of, or may suppose to be beneficial.)

X Q. 32. X Q. 29 repeated.

A. You will find that I have already given fully and explicitly the manner of using, and the purposes for which we use them in the manufacture of breeching goods. The die was made with an object in view, as already stated repeatedly, to lessen the expense of manufacture, to make a superior ring in finish, to make it present to the eye the appear-

ance of being covered with leather and stitched with thread, while, at the same time, we should not destroy any of its original strength or durability. I know of no other uses at present to which I could put the die in the manufacture of breeching rings. The die was made to decrease the heavy expenses incurred by the use of a mould, with which to mould the plastic gum while in process of being vulcanized.

89 The metallic mould was used to lessen the expense of rings packed in soapstone while being vulcanized, and we consider that we have made a great improvement by the use of a die, the construction and purposes of which we considered entirely new in the manufacture of rubber-coated harness-mountings.

X Q. 33. Have you ever been enjoined from the use of dies in the manufacture of breeching rings?

A. We never have.

X Q. 34. Look at the answer to direct interrogatory 4, and state why you did not there give any other of your many reasons for the use of dies.

(Objected to as immaterial.)

A. I at that time considered the answer to fully cover the question asked.

X Q. 35. Look at your answer to direct interrogatory 3, and state by what test you discovered the composition of the ring referred to.

A. I do not state in my answer to question 3 what the composition is. I say that I find upon cutting with a knife that it has the appearance and quality of a composition composed of shellac, plaster of paris, and ivory-dust; that it is brittle and crumbly, like chalk or clay, and that in the specifications of M'r Welling's patent of 1863, I think, speaks or mentions some of the component parts as being shellac and ivory-dust, and other chalky or earthy matter.

Redirect examination by M'r Clayton:

Re-D. Q. 36. You have been asked many questions as to the character and objects of the dies used in making rubber-coated harness-rings; please state whether or not all the dies used by you for that purpose were adapted to those rings only provided with a lap and imitation seam, as shown in Exhibit No. 10.

A. All of the dies for the manufacture of hard rubber-coated harness-rings are constructed in a manner so as to give to the article, when finished, an appearance of being lapped and sewn on.

Re-D. Q. 37. State whether or not the dies which you used in

90 making rubber-coated harness-rings were of a proper form for finishing a metallic ring covered with hard rubber of the shape of the ring described in Welling's patent of 1863, which is a ring cylindrical, or nearly so, in cross-section, without any fold or lap.

A. From examination of the mould or die used by M'r Welling for compressing his composition upon the iron ring and the die used by us for finishing rubber harness-rings, I find they are very much different in their construction; M'r Welling's mould could not form such a ring as finished by our die.

Re-D. 38. What is the condition in respect to hardness of the vulcanized rubber when you use the dies, and what is the condition of the Welling composition in respect to hardness when he uses his die?

(Objected to, as witness has not been shown competent to answer in regard to Welling's patent.)

A. The rubber coating when we use our die is what is known as vulcanized India rubber—hard rubber—and is about the consistency or hardness of horn or bone. From the testimony of M'r Welling, given

in this case, I judge the consistency of his imitation ivory, at the time he puts it in the die or mould, to be nearly to that of stiff putty, or plastic under the pressure of the finger.

(Counsel for complainant objects to all questions which are not in rebuttal, or matters not referred to in the direct examination.)

R3-D. Q. 39. State whether or not defendants, before they began the use of the dies referred to, manufactured rubber-covered harness-rings like Exhibit No. 10, having a lap and imitation stitching; and if so, to what extent, and how was the stitching produced?

A. Our first productions in the way of rings were made by taking a s eet of plastic gum, cutting a strip the proper length and width, enveloping the ring, and lapping the outer edges together, leaving a space wide enough to turn off and finish what we term the seam on the outer edge. The imitation stitch was put on by the use of a tool hav-
91 ing a wheel made with points on the outer circumference like saw-teeth, which pricked in the hard rubber, making the n itation seam or stitch. Such rings were made to the extent of manyi hundreds. In order to save expense in manufacture and to make more perfection in the ring we used a metallic mould, in which the form of the ring, with the lap, was made. Such mould was highly polished and was formed by two halves, in which the ring was enclosed, and when firmly pressed together threw off all extra amount of the plastic gum not required to form a perfect ring.

ANDREW ALBRIGHT.

Sworn to before me.

JOSEPH GUTMAN, J'R,
Examiner, &c.

WILLIAM L. TOMPKINS, a witness of lawful age, produced on the part of the defendant, being examined by M'r Clayton, counsel for defendant, deposes and says as follows:

Q. 1. What is your name, age, residence, and business, and how long have you been in such business?

A. My name is William L. Tompkins. I am 35 years old. I reside at Newark, New Jersey. I am a harness manufacturer. I have been in the business of manufacturing harness for 18 years.

Q. 2. State whether or not you have bought and sold in your business the martingale-rings manufactured and sold by William M. Welling under his patents; and, if so, state their price and the uses to which they were put, within your knowledge.

A. I have bought them and put them into harness and sold them in that way. The price, I think, is $12.00 a gross; but I cannot say positively.

Q. 3. To what parts of harness are those rings used?

A. Only for martingale-rings, that ever I knew of.

Q. 4. State whether or not you have bought and sold in your business the rings manufactured and sold by defendants known as rubber-coated rings; and, if so, state their price and the uses to which they were
92 put, within your knowledge, and their relative rank and value as compared with the Welling ring.

A. We have bought and sold them. I do not remember the price now, but I think they cost more than the Welling ring. We have used these rubber-coated rings for breeching-r ngs. We consider them a superior ring to the Welling ring.

Q. 5. State whether or not, and if so, what knowledge you have of the

use, before the year 1862, of metal rings covered with japan or varnish or paint.

A. I have used an iron ring covered with japan for a martingale-ring before the year 1862. I have used more or less of them ever since I had anything to do with the business; not to a great extent.

Q. 6. State whether or not you recognize the box here shown you as a box obtained by you from M'r Welling, containing martingale-rings of his manufacture.

A. I do.

(Defendant offers in evidence said box, marked "Defendants' Exhibit No. 11.")

Q. 7. What are the words on the label now on the said box and on it at the time of your purchase?

(Objected to as not within the consent made at the end of the last examination; referring neither to the use, price, nor relative value of the martingale-ring.)

A. "½ gross black No. 1 rubber martingale-rings."

Cross-examined by M'r Betts:

X Q. 2. Are you connected with M'r Albright in business?

A. No.

WILLIAM L. TOMPKINS.

Sworn to before me.

JOSEPH GUTMAN, J'R,
Examiner, &c.

93 GEORGE G. GORUM, a witness of lawful age, produced on the part of the defendants, being examined by M'r Clayton, counsel for defendants, deposes and says as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is George G. Gorum. I am 34 years old. I reside at Newark, New Jersey. I am employed in a harness and saddle manufactory.

Q. 2. State whether or not you have bought from William M. Welling martingale-rings under his patents; and, if so, state their prices, and the use to which such rings were put.

A. I have bought them; the price of the No. 1 black is $12.00 a gross, and the No. 1 white is, I think, $14.00; we use them for martingales and for no other purpose.

Q. 3. State whether or not you recognize the box now shown you as a box containing martingale-rings, which you obtained with the rings from William M. Welling; and, if so, state what is the label upon the outside of the box now, and at the time you got it.

(Complainant's counsel objects to question, and the introduction of the box as an exhibit, as irrelevant to the matters to which this examination is confined by the stipulation at the end of last examination.)

A. This is the box that I bought with rings from William M. Welling. The words on the label are: "½ gross white No. 1 rubber martingale-rings."

Q. 4. What is the label on the inside of the box?

A. "William M. Welling; patented May 12, 1868."

(Defendants' counsel here offers in evidence said box as an exhibit, and it is marked "Defendants' Exhibit No. 12.")

Q. 5. Were those labels on the box at the time you bought it?

A. They were.

94 Q. 6. Have you bought rings manufactured by M'r Albright

and the other defendants, known as rubber-coated rings? And, if so, state their price and the uses to which they were put, and their rank and value as compared with the Welling ring.

A. I have bought Albright's rings. The harness rings are $20 and $22 a gross. The breeching rings are $6.50 and $7.50 a dozen, I think, and the martingale-rings are $9 and $10 a dozen, I think; but I am not positive. They rank far superior to the Welling rings for the use to which the Welling ring is put, or I should not pay the difference.

Q. 7. What, if any, knowledge have you, prior to 1862, of the use in harness of a metal ring covered with japan or varnish?

(Same objection as last.)

A. I have no positive knowledge, anything more than of hearsay. I have only been in the business eight years.

GEO. G. GORUM.

Sworn to before me.

JOSEPH GUTMAN, J'R.
Examiner, &c.

By consent, "Defendants' Exhibit No. 1," English patent to A. V. Newton, March 4th, 1851, No. 13542, is withdrawn from evidence.

J. G., J'R, *Ex'r.*

95 *Opinion.—Filed May* 25, 1874.

United States circuit c't, district of New Jersey. In equity.

WILLIAM M. WELLING, COMPL'T,
and
THE RUBBER-COATED HARNESS COMPANY ET AL., DEF'TS.

MAY 25, 1874.

NIXON, district judge:

This is a suit for an alleged infringement of letters-patent No. 37941, & bearing date March 17, 1863, granted to the complainant for a new & useful improvement in rings for martingales; and the questions in issue are determined by the construction & scope to be given to the specifications & claim of said patent.

The schedule annexed is dated April 8, 1862, & the complainant therein states his invention as follows:

"In letters patent granted to me August 4, 1857, a composition & mode of making factitious ivory is set forth, & out of said materials I have manufactured billiard-balls, rings of various kinds, &c. My
96 present invention does not relate to any particular composition, as that in the aforesaid patent, or any similar compound, may be employed. The nature of my said invention consists in the employment of a metallic ring, within a ring formed of artificial ivory or similar materials, for giving strength to the same, thereby producing a new article of manufacture, & one that is stronger than an ivory ring, & possesses all the beauty of appearance, & can be afforded at a very much less cost.

"Ivory rings, particularly such as used for martingales, require to be made out of very solid ivory in order to be sufficiently strong, & hence are quite costly.

"In order to make my improved rings, I take a ring of metal such as

use, before the year 1862, of metal rings covered with japan or varnish or paint.

A. I have used an iron ring covered with japan for a martingale-ring before the year 1862. I have used more or less of them ever since I had anything to do with the business; not to a great extent.

Q. 6. State whether or not you recognize the box here shown you as a box obtained by you from M'r Welling, containing martingale-rings of his manufacture.

A. I do.

(Defendant offers in evidence said box, marked "Defendants' Exhibit No. 11.")

Q. 7. What are the words on the label now on the said box and on it at the time of your purchase?

(Objected to as not within the consent made at the end of the last examination; referring neither to the use, price, nor relative value of the martingale-ring.)

A. "½ gross black No. 1 rubber martingale-rings."

Cross-examined by M'r Betts:

X Q. 2. Are you connected with M'r Albright in business?

A. No.

WILLIAM L. TOMPKINS.

Sworn to before me.

JOSEPH GUTMAN, J'R,
Examiner, &c.

93 GEORGE G. GORUM, a witness of lawful age, produced on the part of the defendants, being examined by M'r Clayton, counsel for defendants, deposes and says as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is George G. Gorum. I am 34 years old. I reside at Newark, New Jersey. I am employed in a harness and saddle manufactory.

Q. 2. State whether or not you have bought from William M. Welling martingale-rings under his patents; and, if so, state their prices, and the use to which such rings were put.

A. I have bought them; the price of the No. 1 black is $12.00 a gross, and the No. 1 white is, I think, $14.00; we use them for martingales and for no other purpose.

Q. 3. State whether or not you recognize the box now shown you as a box containing martingale-rings, which you obtained with the rings from William M. Welling; and, if so, state what is the label upon the outside of the box now, and at the time you got it.

(Complainant's counsel objects to question, and the introduction of the box as an exhibit, as irrelevant to the matters to which this examination is confined by the stipulation at the end of last examination.)

A. This is the box that I bought with rings from William M. Welling. The words on the label are: "½ gross white No. 1 rubber martingale-rings."

Q. 4. What is the label on the inside of the box?

A. "William M. Welling; patented May 12, 1868."

(Defendants' counsel here offers in evidence said box as an exhibit, and it is marked "Defendants' Exhibit No. 12.")

Q. 5. Were those labels on the box at the time you bought it?

A. They were.

94 Q. 6. Have you bought rings manufactured by M'r Albright

and the other defendants, known as rubber-coated rings? And, if so, state their price and the uses to which they were put, and their rank and value as compared with the Welling ring.

A. I have bought Albright's rings. The harness rings are $20 and $22 a gross. The breeching rings are $6.50 and $7.50 a dozen, I think, and the martingale-rings are $9 and $10 a dozen, I think; but I am not positive. They rank far superior to the Welling rings for the use to which the Welling ring is put, or I should not pay the difference.

Q. 7. What, if any, knowledge have you, prior to 1862, of the use in harness of a metal ring covered with japan or varnish?

(Same objection as last.)

A. I have no positive knowledge, anything more than of hearsay. I have only been in the business eight years.

GEO. G. GORUM.

Sworn to before me.

JOSEPH GUTMAN, J'R.
Examiner, &c.

By consent, "Defendants' Exhibit No. 1," English patent to A. V. Newton, March 4th, 1851, No. 13542, is withdrawn from evidence.

J. G., J'R, *Ex'r.*

95 *Opinion.—Filed May* 25, 1874.

United States circuit c't, district of New Jersey. In equity.

WILLIAM M. WELLING, COMPL'T,
and
THE RUBBER-COATED HARNESS COMPANY ET AL., DEF'TS.

MAY 25, 1874.

NIXON, district judge:

This is a suit for an alleged infringement of letters-patent No. 37941, & bearing date March 17, 1863, granted to the complainant for a new & useful improvement in rings for martingales; and the questions in issue are determined by the construction & scope to be given to the specifications & claim of said patent.

The schedule annexed is dated April 8, 1862, & the complainant therein states his invention as follows:

"In letters patent granted to me August 4, 1857, a composition & mode of making factitious ivory is set forth, & out of said materials I have manufactured billiard-balls, rings of various kinds, &c. My
96 present invention does not relate to any particular composition, as that in the aforesaid patent, or any similar compound, may be employed. The nature of my said invention consists in the employment of a metallic ring, within a ring formed of artificial ivory or similar materials, for giving strength to the same, thereby producing a new article of manufacture, & one that is stronger than an ivory ring, & possesses all the beauty of appearance, & can be afforded at a very much less cost.

"Ivory rings, particularly such as used for martingales, require to be made out of very solid ivory in order to be sufficiently strong, & hence are quite costly.

"In order to make my improved rings, I take a ring of metal such as

shown at *a*; or said ring may be formed by punching out a washer from a sheet of metal, or in any other suitable way; I take the amount of artificial-ivory composition, & by dies or by hand cause the said composition to completely envelop the said ring, with as much uniformity as possible; & to give the exterior finish to the same, press & 97 solidify the mass of composition around the ring, by means of dies, & in so doing any plain or more or less ornamental shape may be given to the said ring, or the surface thereof. My ring is thus made of the desired ornamental appearance, while great strength is attained, at very little cost.

"What I claim & desire to secure by letters-patent is the ring for martingales, &c., manufactured, as set forth, with a metal ring enveloped in composition, as & for the purposes specified."

It is insisted by the defendants that if the patent is valid at all it must be limited to a "martingale-ring intended to imitate ivory, & made by covering a metallic ring with artificial ivory, such as is described in complainant's patent of 1857, or some similar compound."

Bearing in mind the established American rule that patents are to be construed liberally, & are not to be subjected to a rigid interpretation, I think that this construction is too narrow, & does not give to the 98 patentee all that he is entitled to under the specifications & claim of his patent. It is quite clear, indeed, that factitious ivory was the composition uppermost in his thoughts. Having the partiality of a parent for his offspring, he naturally imagined that no superior compound could be found or used. It may be conceded that the full extent of his invention had not then dawned upon him. Men often build better than they know. But where the fair interpretation of the words employed to describe an invention or discovery include matters not in the mind of the patentee at the time, he is as fully authorized to claim the unlooked-for as he is the anticipated results.

The specifications are not well drawn, either as to the grammatical construction of the sentences, or in the use of words to clearly convey the inventor's meaning.

This is not adverted to because it is supposed that bad grammar or infelicitous methods of expression will avoid a patent, but because it is the duty of the court to ascertain the nature & the scope of 99 the invention from the sense of the words which have been used in explaining it; & the same exact rule of interpretation is not to be applied at all times, but such in each case as will best enable the court to arrive at the meaning intended.

It is clear that the patentee had no thought of confining himself or others to the use of the factitious ivory; for, after referring to his patent of 1857, he says: "My present invention does not relate to any particular composition, as that (factitious ivory) or any similar compound may be employed. The nature of my invention consists in the employment of a metallic ring within a ring formed of artificial-ivory or similar materials for giving strength to the same," &c. He then claims "a ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, (generally,) as & for the purposes aforesaid."

To understand & correctly interpret the patent, some reference may properly be made to the state of the art. The defendants' expert, 100 M'r Hedrick, who seems to be an intelligent witness, says that prior to 1862 martingale-rings were made in a variety of ways & of different materials—of ivory, of compositions known as artificial, factitious, or imitation ivory; of metal, coated with varnish, lacquer, japan, enamel, porcelain, metallic plating, & compounds of rubber & gutta-

percha & leather. The only known methods of applying the coatings to the iron ring were by a brush or the fingers, or fusing on to it by heat. The ring gave the strength to the manufactured article & the coating the exterior finish.

The object of the complainant, by his invention, was to introduce an improvement upon the known methods of coating, whereby he would impart strength, durability, & greater polish to the surface, thus producing a more valuable, useful, & beautiful result.

His instrumentalities were all old—an iron ring, a plastic composition, & a die; but, so far as appears in the case, they were new in combination. If his patent had been simply for a metallic ring, covered with any compound capable of being moulded, or with factitious ivory
101 or similar materials, it would have been void for want of novelty. If it had been for the use of the die in pressing & solidifying plastic substances generally, it would have been probably anticipated in this regard by the English letters-patent to Barnwell & Rollauson of 1860, in which such use of dies is plainly indicated.

But the invention is for a combination, & the combination is a metal ring surrounded with some plastic composition, like artificial ivory, of such a nature that it is capable of being compressed, solidified, & polished by the action of the dies, and which is in fact subjected to such action, whereby a martingale-ring is produced with an exterior surface more durable & more highly polished than had before been obtained by different processes of manufacture & at greater cost.

Have the defendants infringed the patent of the complainant thus interpreted?

M'r Albright frankly tells us what they have been doing. He is called as a witness by the complainant, & is asked to detail the process
102 by which certain rubber rings of their manufacture are made. He says, (C. R., p. 17:)

"We take an iron ring, sheet or sheets of rubber rolled to the proper thickness, cut from the sheet a piece in the proper form, & envelop the iron ring with the covering of rubber, pressing the edges in the form of a lap with the fingers, causing the rubber to adhere & to become a homogeneous piece or cover. * * * The ring when covered has this outer coating of rubber in a plastic state; the ring is then placed in an oven & vulcanized. After the ring is taken from the vulcanator after vulcanization, it is of irregular form or shape. We, to make the regular form or shape desired, put it in a lathe-chuck & turn it up in the form or shape desired, or by the use of a steel die, engraved in certain form to produce a ring with such ornamentations on the outer ring as may be desired. The seam or imitation stitch is made by impressions from the die," &c.

He further states that he manufactured the rings produced under letters-patent bearing date October 9, 1866; February 12, 1867;
103 February 13, 1872; December 3, 1872; that he commenced the use of dies over two years ago to save expense in production of the rings; that he claims to have been the inventor of the use of dies for such purpose, & that their use for shaping & ornamenting the articles is a valuable improvement.

The letters-patent under which he justifies his action & claims protection have been issued or re-issued to him, as inventor or assignee, several years since the date of the complainant's invention, & have been exhibited in the case. I have examined their specifications and claims with some care, & am unable to find anything in them essential to the result which is not anticipated by the Welling patent. For

instance, in the specifications to the letters-patent granted February 13, 1872, & re-issued November 26 of the same year, he states that he takes a metallic ring, a composition of vulcanizable gum of a consistence about equal to stiff dough, rolls it into sheets of uniform thickness, & applies it to the ring, working & pressing it to the metal by the hand or otherwise. It is then placed in moulds of proper shape & 104 vulcanized by the usual process, after which the article is ready for the action of the dies.

"The dies to be used should be a very little smaller than the article to be pressed, so that they may thoroughly compress & densify the coating upon the metal. They should have cutting-edges, so as to shear off the superfluous coating, & should be provided with suitable indentations or engraving, so as to produce the desired ornamentation. * * * The dies, now being ready, are slightly heated, & the vulcanized articles are put one at a time in the lower die, while the upper die is pressed or dropped down upon it with great pressure. As the dies act upon the coating with equal pressure in all directions, the coating is made homogeneous, dense, hard, tough, & susceptible to high polish, & is rendered more durable & better than if it were not so pressed. The dies at the same time cut off the superfluous coating, apply ornamentation, if desired, & impart a considerable polish, thus doing 105 away with much labour in tumbling, finishing, & polishing."

We have only to compare this description with the specification of the complainant's patent to ascertain the substantial identity of the two methods. He also takes a metallilc ring, the necessary amount of artificial ivory composition to form the covering, and by dies or by hand causes the said composition to completely envelop the ring with as much uniformity as possible; & to give the exterior finish to the same, presses & solidifies the mass of composition around the ring by means of dies, & in so doing any plain or more or less ornamental shape may be given to the ring or the surface thereof. The ring is thus made of the desired ornamental appearance, while great strength is attained at very little cost.

It will be perceived that the only change made by the defendants' patent is the substitution of a plastic composition known as rubber or gutta-percha, which necessitates the additional process of vulcanization, for the plastic composition called factitious ivory, not the same 106 substance, indeed, as to its essence & constituents, but a similar material in regard to its capability of being adapted to the purpose for which the former is used. It has not even the merit of novelty, for the English patent of Newton, granted in 1851, which was first exhibited in the case by the defendants, & being withdrawn by them, was afterwards marked as an exhibit for the complainant, clearly suggests this precise use of the material, without the application of dies.

In his specifications he says:

"When it is desired that the compound of caoutchouc or gutta-percha shall serve as a covering to the iron or other substance, a thin sheet of the compound is pressed with great care upon the iron or other substance, so as to expel all air from between the adjoining surfaces; and, to cause the most perfect union & adhesion, the coated article is bound with strips or ribbons of cloth, whereby the compound is kept in close contact with the article during the process of hardening.

107 "The combined materials thus treated will be found to possess the qualities desired—the iron or other substance giving strength & the compound giving a hard & durable surface. In this way may be

produced many articles used in & about harness or carriages, such as saddle-trees, buckles, martingale rings, dasher-irons," &c., &c.

It was held, in a recent case in this court, Webster vs. The New Brunswick Carpet Company, (5 Off. Gaz., 522,) that a patent for a combination is infringed by the use of a similar combination, although one of the elements is omitted & another is substituted for it, unless the substituted device is a new one, or performs a function essentially different, or was not known at the date of the patent as a proper substitute for the one omitted.

It would seem, therefore, that the defendents are not permitted to shield themselves from the consequences of infringement by incorporating into a patent the inventions of others, without, at the same
108 time, so changing & adjusting the relations of the constituents thus taken as to produce a new & useful result. They have failed to show that this has been done.

But, irrespective of this view, I am of the opinion, on the whole case, that the claim of the complainant's patent, fairly construed, is not to be limited to the use of factitious ivory; that it is broad enough to include the composition of rubber or gutta-percha, & that there should be a decree for the complainant according to the prayer of his bill.

109 *Decree.—Filed June* 2, 1874.

At a stated term of the circuit court of the United States of America for the district of New Jersey, in the third circuit, held at the city of Trenton, on the second day of June, 1874—

Present, the honorable John T. Nixon, judge.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company, Andrew Albright, and Luther C. Voorhees.

This cause having come on to be heard upon the bill of complaint herein taken as confessed against the defendant, the Rubber-Coated Harness-Trimming Company, the answer of the defendants, Andrew Albright and Luther C. Voorhees, the replication of the com-
110 plainant to such answer, and the proof, oral, documentary, and written, taken and filed in said cause, and having been argued by counsel for the respective parties:

Now, therefore, on consideration thereof, it is ordered, adjudged, and decreed, and the court doth hereby order, adjudge, and decree as follows, viz:

That the letters-patent No. 37941, granted and issued on the 17th day of March, 1863, to Samuel G. Welling, as assignor of the complainant herein, being the letters-patent referred to in the bill of complaint herein, are good and valid in law.

That the said William M. Welling was the first and original inventor and discoverer of the improvement in rings for martingales, &c., as described and claimed in the said letters-patent and the specification annexed thereto, and by assignment duly signed, delivered, and recorded, is now and ever since the 24th day of June, 1869, has been the exclusive owner of said patent, and of all claims for infringing the same at any time.

That the said The Rubber-Coated Harness-Trimming Company,

111 and Andrew Albright and Luther C. Voorhees, defendants herein, have infringed upon the said letters patent, and upon the exclusive rights of the complainant under the same; that is to say, by making, using, and selling harness and carriage trimmings, &c., each and all containing the said invention, discovery, improvements, and combinations, consisting, as therein and in the schedule set forth, of a ring manufactured substantially as set forth with a metal ring enveloped in composition, substantially as and for the purposes specified, as charged in the said bill of complaint.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendants the profits, gains, and advantages which the said defendants have received or made, or which have arisen or accrued to them, or either of them, from the infringement of the said patent by the manufacture, use, or sale of the invention as described and secured by the said letters-patent No. 37941, or any equivalent thereof, since the 24th day of June, 1869, and also the damages
112 which the complainant may have or has sustained by reason of any infringement of said letters-patent.

And it is further, ordered, adjudged, and decreed that it be referred to William Paterson, residing in the city of Newark, who is hereby appointed and constituted master of this court pro hac vice by consent of the respective parties, to ascertain and take, and state and report to the court, an account of the number of infringing devices made and also the number sold by the said defendants; and also the gains, profits, and advantages which the said defendants have received, or which have accrued or arisen to them, or either of them, since the 24th day of June, 1869, from infringing the said exclusive rights of the said complainant, by the manufacture, use, and sale of the said improvements, patented in said letters-patent, and also to compute, assess, ascertain, and state the amount of the damages which the complainant has sustained by reason of said infringement.

And it is further ordered, adjudged, and decreed that the com-
113 plainant on such accounting have the right to cause an examination of said defendants ore tenus or otherwise, and also the production of the books, vouchers, and documents of said defendants, and that said defendants attend for such purposes before said master from time to time, and at such places within this district as said master shall direct.

And it also further ordered, adjudged, and decreed that a perpetual injunction be issued in this suit against the said defendants restraining them, and each of them, their agents, clerks, servants, and workmen, and all claiming or holding under or through them, or either of them, from making, selling, or using, or in any manner disposing of devices embracing the invention or improvements described in the said letters-patent, pursuant to the prayer of the said bill of complaint.

And it is further ordered adjudged, and decreed, that the complainant do recover of the defendants the costs and expenses of this suit, to be taxed.

And it is further ordered that the question of increase of damages, and all other questions be reserved until the coming in of the master's report.

JNO. T. NIXON, *J.*

114 *Injunction.*

The President of the United States to the Rubber-Coated Harness-

Trimming Company, Andrew Albright, and Luther C. Voorhees, clerks, attorneys, agents, servants, and workmen, greeting:

Whereas it has been represented to us in our circuit court of the United States for the third circuit and district of New Jersey that letters-patent of the United States were issued to Samuel G. Welling, assignee of William M. Welling, in due form of law, on the 17th day of March, 1863, No. 37941, for an improvement in rings for martingales, &c., and that the said letters-patent were duly assigned to William M. Welling, and that you, the said company, and Albright & Voorhees have infringed the same:

Now, therefore, we strictly command and enjoin you the said The Rubber-Coated Harness-Trimming Company, Andrew Albright and Luther C. Voorhees, and your & each of your clerks, agents, servants, and workmen, under the penalties that may fall on you in case of disobedience, that you forthwith forever desist from directly or
115 indirectly making or causing to be made, using or causing to be used, or vending to others to be used in any manner, any harness or carriage-trimmings made or constructed as you have heretofore made, constructed, or used the same, viz, each and all containing the said invention granted by said letters-patent, to wit, a ring manufactured as set forth substantially, with a metal ring enveloped in composition, substantially as & for the purposes specified, or from infringing said letters-patent directly or indirectly in any way whatsoever.

Witness the Hon. Morrison R. Waite, Chief-Justice of the Supreme Court of the United States, at the city of Trenton, on the twelfth day of June, 1874.

[L. S.] S. D. OLIPHANT, *Clerk.*

WHITNEY & BETTS,
Complainant's Solicitors.

(Endorsed:) Duly served a copy of the within writ June 23, 1874. John C. Bailey, dep. U. S. marshal.

116 *Master's report.—Filed April 9, 1875.*

United States circuit court, district of New Jersey. In equity.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS COMPANY, Andrew Albright, and Luther C. Voorhees.

To the judges of the circuit court of the United States for the district of New Jersey.

I, William Patterson, to whom it was referred as master to take the account of the profits derived and received by the defendants from the infringement of the complainant's patent, and to assess the damages suffered by the complainant by such infringement, do report as follows: That I have been attended by the counsel for the respective parties and said parties, and have heard and considered the proofs and allegations produced by them.

117 I find, as a matter of fact, that said defendants, Albright and Voorhees, doing business under the name of the defendant company, between January 1st, 1871, and the issuing of the injunction herein, manufactured and sold five hundred and eighty gross of harness rings, and one hundred and seventy-nine gross of breeching-rings, made

substantially in the manner described and claimed in the complainant's patent.

I further find, as a matter of fact, from the evidence and admissions of the defendants, that said defendants made and realized from and by reason of the complainant's patent in the manufacture of said rings, the sum of five thousand dollars as profits, which they would not have made and realized but for said infringement.

I further find, as matter of fact, that there is no proof before me from which I can assess any damages.

I find, as matter of law, that said complainant is entitled to recover of the defendants the sum of five thousand dollars as the amount
118 of profits made and realized by the defendants by means and by reason of the infringement of the complainant's patent.

All of which is respectfully reported, this 8th day of April, A. D. 1875, at Newark, New Jersey.

WILLIAM PATERSON, *Master.*

119 *Master's opinion on order of reference.—Filed Oct.* 19, 1874.

A decree has been entered in this cause according to the prayer of the bill of complaint, and a reference ordered to the undersigned as a master, in the usual form, to ascertain what damage or loss of profits have been sustained by the complainant by reason of the infringement of his patent.

The defendants were notified by me, at the request of the complainant, to prepare and file with me a statement and an account of articles manufactured and sold by them as infringing said patent, for which they were liable under the decree to respond in damage.

In pursuance of such notice the defendants, on 28th September last, the day appointed for the first hearing, did file with me a paper purporting to be such statement and account. To this the complainant objects, and states his objections on the record of the proceedings before the master.

I understand the matter in difference between the parties as argued before me on their behalf, and submitted for my opinion, to be whether the rings described in the claim of the complainant under letters-patent No. 37941 should include any other variety of trimmings
120 used upon harness, or what, I believe, is designated in the trade as harness-mountings or harness-trimmings, than those of the exact form and shape of a ring.

It is clear that no other form or shape is mentioned, totidem verbis, in the patent, and it is equally clear that no other form or shape is stated or referred to in the proceedings in the cause or in the opinion of the court.

Aliunde from the record under the order of reference, I learn from the parties that an application will be made to-morrow to the court for process of contempt against the defendants for disregarding the injunction issued in the matter, and continuing to manufacture and sell articles in infringement of the patent.

This, I suppose, virtually will decide the question now raised in this hearing, for if the articles other than of the ring model, or form, are decided to be outside of this particular patent, the defendants can have been guilty of no contempt. In that view any opinion or judgment of mine will be of no moment; but I will state briefly the conclu-
121 sion at which I have arrived after a careful consideration of all the matters that have been laid before me.

As I understand the decision of the court, the patent of the complainant is founded on a claim for a combination; that is, the invention as stated in the opinion of Judge Nixon on page 4 of the pamphlet entitled "Opinion of the court," sustaining the validity of the patent of the complainant. He states the combination to be for an iron ring, a plastic composition, and a die; neither of which, of and by itself, were patentable, for want of novelty. It is the combination of these three substances or materials, subjected to compression, that make the invention for which the patent was issued. This compression of these several articles, about neither of which separately there was nothing new, constituted the novelty. An iron or metallic or a ring composed of similar substance—for however other expressions were modified, the ring name and form were preserved—was a part of this combina-
122 tion, and the result of the process was stated to be a ring. No other finality appears to have been contemplated. It was ring first, ring last, and ring all the time.

Other articles of harness mountings or trimmings than those of an oval shape were manufactured and used the same as now. Construing this in the most liberal way, and with the utmost latitude of interpretation, I fail to see how that which is described in the specification and claim as a ring, or round, and a product described also therein as of the same shape or form, can be interpreted to mean any other shape or form, or even a part thereof. Whether a shape or form be material or not should depend, in my opinion, upon the nature of each case. No two are or can be analogous entirely any more than two persons are entirely alike in outward appearance or mental qualities.

Here I regard it as a pervading ingredient—the essence of the invention; for the inventor seems to have made it so in every part of his description and result. The idea, too, has been carried out by him
123 in practice, for it does not appear in the case that he has manufactured articles of any other form than that of rings. No manufacturer would be likely to fill an order for a gross of rings with a gross of buckles, though part of the ring shape is retained in the buckle. Still less could a tenet be considered as a ring, though more of the ring shape is preserved than in the buckle.

A square may be nothing more than a circle with rounded corners, or vice versa; but, ordinarily speaking, when a person mentions a square article, or one that has four even sides and angles, he would not be supposed to entertain or to convey any idea whatever of rounded corners or a circle.

They are understood to mean very different shapes, and their mathematical properties are different altogether. The radius or tangent of a square would sound very odd to a scientific ear. There is a wide variation, too, in the properties of the same general shape, for it is much
124 easier to ascertain the centre of a circle than the foci of an ellipse.

Why a patentee should claim and be allowed the benefit of a construction so liberal and latitudinarian as that contended for on behalf of the complainant is more than I am able to understand. He seems to have been careful sufficiently in not confining his composition to factitious ivory, but so far as I can see has described but one kind of shape either as the foundation or finality of his invention. The same language applied to the ring that was applied to the composition would have been sufficient to warrant the court in deciding both in favor of the complainant.

A few words could have conveyed the idea of using other than the ring form. It cannot be claimed that the patentee did not have other

familiar shapes in his mind at the time when harness-trimmings included them, then as well as now. An examination of the patents of the defendant Albright shows that in each of those other terms or
125 shapes are used and other articles designated than the ring. If the ring were used by either Welling or Albright simply as an illustration, the patents of the latter would have been just as valid without specifying any other form, and, so far as I can see, a straight piece of iron or other metal would have been as appropriate for such purpose.

This opinion is formed without any assistance from the opinion of Judge Nixon. I can find nothing in that applicable to or bearing directly on the question now raised. It does not seem, as I remarked previously, to have been started or considered in the proceedings to the time of this reference.

It is both novel and interesting, and, in my opinion, should be determined either by a separate action or by the court in this case before final action in the matter of this reference.

As advised at present the investigation into the amount of damages or loss of profits sustained by the complainant must be limited to the articles manufactured and sold by the defendants of the ring shape or form only.

126 One other word. The solicitor for the complainant, referring to "Exhibit Martingale Rings" for complainant, with a loop attached, asked if that could be called a ring or of the ring form. The whole ring is there with the loop-attachment. Certainly it could not be regarded as a ring pure and simple, and nothing else, and what was understood ordinarily as such. I have no recollection of having seen a martingale ring previously with that or any other ornamental device. When I was more familiar with the use of the article than I have been for some years past, the rings produced here as the manufacture of the complainants, or similar ones in appearance, were common. I suppose the loop is a recent improvement, and, like many other things, more for ornament than use. I do not see that it makes the ring any less a ring than before, or modifies or destroys the form.

19th October, 1874.

WILLIAM PATERSON.

127 *Final decree.—Filed April* 9, 1875.

At a circuit court of the United States held in and for the district of New Jersey, on the ninth day of April, 1875.

Present, Hon. John T. Nixon, judge.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING CO., Andrew Albright, and Luther C. Voorhees.

This cause having come on to be heard upon the master's report thereupon, upon consideration thereof, it is ordered, adjudged, and decreed that the said master's report be confirmed and that the complainant, William M. Welling, do recover of the defendants, The Rubber-Coated Harness-Trimming Co., Andrew Albright, and Luther C. Voor-
128 hees, the sum of five thousand dollars, the amount awarded by said report, together with the costs and disbursements of this suit, as adjusted by the clerk of this court, amounting to the sum of three

hundred and forty-two $\frac{50}{100}$ dollars, amounting in all to the sum of five thousand three hundred and forty-two $\frac{50}{100}$ dollars, and that said defendants pay said sum to the complainants, and that the complainant have execution and such other proper process of this court as may be meet for the collection thereof.

JNO. T. NIXON, *J.*

Approved:

J. C. CLAYTON,
Sol'r, & of Counsel for all of Def'ts.

129 *Bond.—Filed April* 17, 1875.

Circuit court of the United States in and for the district of New Jersey.
In equity.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company, Andrew Albright, and Luther C. Voorheis. } Bond.

Know all men by these presents that the Rubber-Coated Harness-Trimming Company, a corporation duly organized under the laws of the State State of New Jersey, and located in Newark, New Jersey, and Andrew Albright and Luther C. Voorhees, as principals, and Joseph J. Spurr and Jeremiah Counsellor, of Newark, New Jersey, as sureties, are held and firmly bound unto the said William M. Welling,
of New York City, in the sum of ten thousand six hundred and
130 eighty-five dollars to be paid to the said William M. Welling,
his executors or administrators, to which payment, well and truly to be made, the said Rubber-Coated Harness-Trimming Company does bind itself, its successors and legal representatives, jointly and severally, with the above-named principals and sureties, who bind themselves, their heirs, executors, and administrators, jointly and severally, with the Rubber-Coated Harness-Trimming Company, its successors and legal representatives, firmly by these presents, sealed with the seal of the Rubber-Coated Harness-Trimming Company affixed by Andrew Albright, president, who had been authorized to do so, and sealed with the seals of Andrew Albright and Luther C. Voorheis, as principals, and of Joseph J. Spurr and Jeremiah Counsellor, as sureties, and dated at Newark, N. J., this 15th day of April, (1875,) A. D. one thousand eight hundred and seventy-five.

Whereas lately, at a circuit court of the United States, at Trenton,
within and for the district of New Jersey, on the ninth day of
131 April, A. D. 1875, in a certain suit in equity depending in said
court between William M. Welling, complainant, and the Rubber-Coated Harness-Trimming Company, Andrew Albright, and Luther C. Voorheis, defendants, a decree was rendered against the said defendants for the payment of the sum of five thousand three hundred and forty-two $\frac{50}{100}$ dollars, and the above-named defendants having taken an appeal to the Supreme Court of the United States to reverse the said decree:

Now the condition of this obligation is such that if the above-named The Rubber-Coated Harness-Trimming Company, Andrew Albright, and Luther C. Voorheis, defendants, shall prosecute their said appeal to effect, and answer all costs and damages (if they shall fail to make good

their plea) which may be finally decreed against them, then the above obligation to be void; otherwise, to remain in full force and effect.

RUBBER COATED HARNESS-TRIMMING COMPANY, [L. S.]
By ANDREW ALBRIGHT, *President.*
ANDREW ALBRIGHT. [L. S.]
LUTHER C. VOORHEIS. [L. S.]
132 J. J. SPURR. [L. S.]
J. COUNSELLOR. [L. S.]

UNITED STATES OF AMERICA,
District of New Jersey, ss:

Joseph J. Spurr and Jeremiah Counsellor, the two subscribers as sureties to the foregoing bond, being severally duly sworn, depose and say, each for himself, that he is a resident and freeholder within this district, and is worth the sum of ten thousand six hundred and eighty-five dollars over all his debts and liabilities, and exclusive of property exempt by law from execution.

J. J. SPURR.
J. COUNSELLOR.

Sworn before me this 15th day of April, 1875.
ABRAHAM MANNERS,
Master in Chancery of New Jersey.

(Endorsed:) I hereby approve the within bond. April 16, 1875. Jno. S. Nixon, J.

133 *Petition for appeal.—Filed April* 17, 1875.

In the circuit court of the United States, district of New Jersey. In equity.

WILLIAM M. WELLING
vs.
THE RUBBER-COATED HARNESS-TRIMMING Company, Andrew Albright, and Luther C. Voorheis.

The appeal of the Rubber-Coated Harness-Trimming Company, Andrew Albright, and Luther C. Voorheis, the above-named defendants and appellants, respectfully shows:

That upon the 11th day of November, 1872, the said complainant filed his bill in the circuit court of the United States for the district of New Jersey against the above-named defendants and appellants, charging them with infringing certain letters-patent of the United States alleged to have been lawfully granted to one Samuel G. Welling, assignee of said complainant, and afterwards assigned to said complainant, said letters being numbered 37941, and dated March 17th, 1863.

134 That upon the 4th of February, 1873, the answer of defendants was duly filed. That upon the 5th of March, 1873, the replication of complainant was filed.

That proofs having been taken and filed by complainant and defendants upon the 30th day of September, 1873, the cause was argued by the respective counsel.

That upon the 25th of May, 1874, the opinion of the court was filed.

That upon the 2d of June, 1874, a decree for injunction, &c., against defendants was filed. That an injunction was issued against defend

ants on the 12th of June, 1874, and served upon them on the 30th of June, 1874.

That on the 9th of April, 1875, the master filed his report.

That on the 9th of April, 1875, a final decree was made and pronounced, and entered in the cause against the defendants, where it was ordered, adjudged, and decreed that the said master's report be confirmed, and that the complainant do recover of the defendants the sum of five thousand dollars, the amount awarded by said report, to-
135 gether with the costs and disbursements of this suit as adjusted by the clerk of this said court, amounting to the sum of three hundred and forty-two $\frac{50}{100}$ dollars, and amounting all to five thousand three hundred and forty-two $\frac{50}{100}$ dollars, and that said defendants do pay said sum to the complainant, & that complainant have execution, &c.

Wherefore these appellants appeal from the whole of said decree of said circuit court of the United States, and respectfully pray that the decree of the said circuit court, and the bill, answer, pleadings, depositions, evidence, and proceedings in the said cause may be sent to the Supreme Court of the United States without delay, and that the said Supreme Court will proceed to hear the said cause anew, and that the said decree of the circuit court, and every part thereof, may be reversed, and a decree made dismissing said bill with costs, or such other decree as to the said Supreme Court shall seem just.

Dated 16th April, 1875.

J. C. CLAYTON,
Sol'r for & of Counsel with Appellants.

136 *Citation.—Filed April* 17, 1875.

In the circuit court of the United States for the district of New Jersey.
In equity.

WILLIAM M. WELLING
vs.
RUBBER-COATED HARNESS-TRIMMING COMPANY, Andrew Albright, and Luther C. Voorheis. } Citation.

By the honorable John T. Nixon, one of the judges of the circuit court of the United States for the district of New Jersey.

To William M. Welling:

Whereas the Rubber-Coated Harness-Trimming Company, Andrew Albright, and Luther C. Voorheis have lately appealed to the Supreme Court of the United States from a decree lately rendered in the circuit court of the United States for the district of New Jersey, made in favor of you, the said William M. Welling, and has filed the security required by law: You are, therefore, hereby cited to appear before the
137 said Supreme Court, at the city of Washington, on the first Monday of October next, to do and receive what may appertain to justice to be done in the premises.

Given under my hand, at the city of Trenton, in the district of New Jersey, in the third circuit, the sixteenth day of April, in the year of our Lord one thousand eight hundred and seventy-five.

JNO. T. NIXON, *J.*

138 *Admission of service of appeal & citation.*

United States circuit court, district of New Jersey. Equity.

WILLIAM M. WELLING
vs.
RUBBER-COATED HARNESS-TRIMMING COMPANY, Andrew Albright, and Luther C. Voorheis.

Due and lawful service upon the complainant of copies of the appeal and citation to the Supreme Court in the above-entitled cause this 19th day of April, 1875, is hereby admitted.

FREDERIC H. BETTS,
Solicitor for Complainant and Appellee Welling.

139 *Certificate.*

WILLIAM M. WELLING
v.
THE RUBBER-COATED HARNESS-TRIMMING CO. et al. } On bill.

I, S. D. Oliphant, clerk of the circuit court of the United States for the district of New Jersey, do hereby certify that the foregoing is a true and correct transcript of the bill, answer, replication, depositions and other proceedings in the case above stated as they remain of record in my office.

In witness whereof I have hereto set my hand and official seal, at Trenton, this ninth day of October, in the year of our Lord one thousand eight hundred and seventy-five.

[SEAL.] S. D. OLIPHANT, *Clerk.*

(Indorsement on cover:) No. 221. The Rubber-Coated Harness-Trimming Company, Andrew Albright, and Luther C. Voorheis, appellants, vs. William M. Welling. New Jersey C. C. U. S. Filed 15th October, 1875.

U. S. Supreme Court.

THE RUBBER COATED HARNESS TRIMMING COMPANY, ANDREW ALBRIGHT, and LUTHER C. VOORHEIS,
Appellants.

vs.

WILLIAM M. WELLING,
Appellee.

221

Assignment of Error.

I—The Court erred in holding that the Welling "invention is for a *combination*, and the combination "is a metal ring surrounded with some plastic com- "position like artificial ivory of such a nature that it "is capable of being compressed, solidified and pol- "ished by the action of the dies, and which *is* in "fact subjected to such action, whereby a martin- "gale ring is produced, &c" (Record p. 53).

The error consisting in holding that the combination consisted of: 1, the ring; 2, the coating; 3, the *use* of the dies, being not a patentable combination; the only true combination being: 1, the ring, and 2, the factitious ivory coating; or, in the language of the claim. "The *ring for martingales*, etc., manufactured as set forth, with a metal ring enveloped in composition, and as for the purposes set forth."

Gale Mfg. Co
3 Fish. 279

A mechanical combination requires me-
chanical elements

II. The Court erred in holding that the claim of the patent "is not to be limited to the use of factitious ivory; that it is broad enough to include the composition of rubber or gutta-percha; that there should be a decree for the complainant (Record, p. 55).

Whereas the whole tenor of the patent shows that Welling's sole idea was to make a ring to *imitate ivory rings.*

He refers to a particular kind of *factitious* ivory previously patented to him, and specifies the use of that kind of ivory, or any componud similar to that.

Vance vs. Campbell
1 Fish. 483
Brown vs. Piper
10 O.G. 417
Wollensak vs. Sarber
6 Fish. 519

III—The Court erred because it gave no consideration to the Poole patent of March 30, 1853, referred to in his testimony as to the state of the art by Prof. Hedrick. This patent was not in answer and not in evidence. But Prof. Hedrick, an Examiner in the Patent Office, testified as an expert, that the Poole patent of 1853 described martingale rings coated with rubber, and that this fact was known, and of record in the art.

It is submitted that on this argument the Court can take judicial cognizance of the true State of the art, as disclosed in the public records of the Patent Office.

IV—The Court erred in its construction, which includes in combination the ring, the coating and the process or use of a die. This construction is equivalent, when fairly transposed to holding that the claim is for the PROCESS OF MAKING composition coated rings. No language in the patent warrants this construction:

Revised Statutes
§ 4,914

The Court *reissues* the claim, by such a construction changing its obvious form from a claim for a *manufacture*, to claim for a *process.*

This is usurping the function of the Commissioner of Patents upon an application for a *reissue.*

Whenever a patent is inoperative or defective the proper remedy is to amend and reissue.

BRIEF FOR APPELLEE.

Statement and Evidence.

The complainant in this suit, is now, and for several years has been, making martingale rings, covered with an artificial ivory. And his patent under which this suir is brought, and the 1857 patent to which it relates, refer to artificial ivory only. He does not make rings with vulcanized rubber.

The defendants in this case are The Rubber Coated Harness Trimming Company, Andrew Albright and Luther C. Voorheis, all of Newark, N. J. The status of the defendants is shown in their answer. on 1st page Defendants' Record: "That on or about the day of " 1867, The Rubber Coated Harness Trimming "Company became a corporation under the general "laws of the State of New Jersey; that after the "filing of the certificate of incorporation, the defend-"ants, Albright and Voorheis, and others began to "do business under the said incorporation name; that "the said corporation, as such, has virtually ceased "to exist, but that said defendants, Albright and "Voorheis, have succeeded to the business of the "said company, and admit that they now are, and "have been ever since the day 1868, manu-"facturing and selling rubber-coated harness trim-"mings, under the style and name of 'The Rubber-"'Coated Harness Trimming Company.'"

Record 5

Their factory is an extensive one, and is in the City of Newark.

The defendants, for several years, have been very extensively engaged in making rubber-coated harness trimmings of all kinds, including metallic rings, buckles, and other "trimmings," coated with vulcanized rubber, and *are the first and only parties in the world* who have manufactured and sold such articles. They have created a new manufacture, under their five patents, which they are conducting

Record 49, 50, 51

so successfully that the harness trimmings which are most in demand and command the highest prices, are their rubber-coated trimmings. See defendants' record: ALBRIGHT, TOMPKINS, GORUM.

So high has become their reputation that complainant now abandons the name of "ivory," once so highly prized by him, and falsely appropriates the name of "rubber," from the more meritorious manufacture of the defendants,

Record 35

See in defendants' record, p. 8:

"WELLING. Q. 8. What composition do you "now use in covering martingale rings, in accord- "ance with the patent now in suit?

"A. I use white shellac for white rings, and "brown shellac for fancy coloreed and black rings; "kaolin, cotton, or wool fibre, lamp-black. cam- "phor, and a small quantity of linseed oil—a few "drops; the oil is used in case the material does not "mix well, and may be left out."

Not a word here about rubber.

Furthermore. in same examination, Welling says, p. 12:

Record 37

"Re-D. Q. 34. By what name are the rings pro- "duced by you known to the trade?

"A. *They are known as the 'White and Black* Rubber Rings.'"

The relative character, rank and value of the complainant's rings and defendant's rings, are fully set forth in the depositions of Hedrick, Albright, Tompkins and Gorum; Albright's ring being far handsomer and better, and commanding a far higher price. Gorum (defendant's record) says: fols. 138–142, Welling's martingale rings sell from $12 to $14 *per gross*, while Albright's martingale rings sells for $9 to $12 *per dozen*, and rank far superior to the Welling rings.

But the clearest exposition of the comparative merits of the two manufactures is best seen by an inspection of the exhibits. They are also admirably described by PROFESSOR HEDRICK, as follows:

Record 39

[The witness having in his hands the original models filed by Welling and Albright.]

"9. A. The Welling model shows an iron ring "covered with a composition belonging to the com- "pounds known as *artificial ivory*. It is hard, "brittle, and friable. When cut with a knife it "crumbles into powder. It differs very little in "appearance from what is known as enamel, and "closely resembles clay or plaster. Its structure is "granular, and is made of earthy materials held "together by some kind of cement. It is not as "hard as enamel, but is harder than ordinary "plaster, and would be fairly called an artificial "ivory. The color is a dingy white, and the gen- "eral character more nearly resembles earthenware "than anything I can think of at present. It is too "brittle to give any additional strength to the "iron ring, and would not possess much value as a "material for forming martingale rings without the "iron core. In this respect it is not equal to good "porcelain; and with the iron core for strengthen- "ing it, would not be preferred to a similar ring "covered with enamel, except that it somewhat re- "sembles ivory, and therefore, as a substitute for "ivory has some importance.

"As regards Exhibit No. 10, I have compared it "with the original model, filed by Andrew Albright, "in the U. S. Patent Office, January 23d, 1867, pre- "paratory to obtaining the patent issued to him, "and dated February 12, 1867.

"I find this Exhibit to be composed of a metallic "ring, covered with a thick coating of the material "known in the arts as vulcanized hard rubber, said "material being the same as shown in Albright's "model above mentioned. This material is of a jet "black color, hard, tough, and elastic, is not gran- "ular in its structure, is uniform throughout in its "texture, and when cut with a knife, comes off in "tough shavings, not brittle or friable.

Record 49, 50, 51

so successfully that the harness trimmings which are most in demand and command the highest prices, are their rubber-coated trimmings. See defendants' record: ALBRIGHT, TOMPKINS, GORUM.

So high has become their reputation that complainant now abandons the name of "ivory," once so highly prized by him, and falsely appropriates the name of "rubber," from the more meritorious manufacture of the defendants,

Record 35

See in defendants' record, p. 8:

"WELLING. Q. 8. What composition do you "now use in covering martingale rings, in accord- "ance with the patent now in suit?

"A. I use white shellac for white rings, and "brown shellac for fancy coloreed and black rings; "kaolin, cotton, or wool fibre, lamp-black. cam- "phor, and a small quantity of linseed oil—a few "drops; the oil is used in case the material does not "mix well, and may be left out."

Not a word here about rubber.

Furthermore. in same examination, Welling says, p. 12:

Record 37

"Re-D. Q. 34. By what name are the rings pro- "duced by you known to the trade?

"A. *They are known as the 'White and Black* Rubber Rings.'"

The relative character, rank and value of the complainant's rings and defendant's rings, are fully set forth in the depositions of Hedrick, Albright, Tompkins and Gorum; Albright's ring being far handsomer and better, and commanding a far higher price. Gorum (defendant's record) says: fols. 138–142, Welling's martingale rings sell from $12 to $14 *per gross*, while Albright's martingale rings sells for $9 to $12 *per dozen*, and rank far superior to the Welling rings.

But the clearest exposition of the comparative merits of the two manufactures is best seen by an inspection of the exhibits. They are also admirably described by PROFESSOR HEDRICK, as follows:

~~Defendants' Record, folios 71 to 77:~~

Record 39

[The witness having in his hands the original models filed by Welling and Albright.]

"9. A. The Welling model shows an iron ring "covered with a composition belonging to the com- "pounds known as *artificial ivory*. It is hard, "brittle, and friable. When cut with a knife it "crumbles into powder. It differs very little in "appearance from what is known as enamel, and "closely resembles clay or plaster. Its structure is "granular, and is made of earthy materials held "together by some kind of cement. It is not as "hard as enamel, but is harder than ordinary "plaster, and would be fairly called an artificial "ivory. The color is a dingy white, and the gen- "eral character more nearly resembles earthenware "than anything I can think of at present. It is too "brittle to give any additional strength to the "iron ring, and would not possess much value as a "material for forming martingale rings without the "iron core. In this respect it is not equal to good "porcelain; and with the iron core for strengthen- "ing it, would not be preferred to a similar ring "covered with enamel, except that it somewhat re- "sembles ivory, and therefore, as a substitute for "ivory has some importance.

"As regards Exhibit No. 10, I have compared it "with the original model, filed by Andrew Albright, "in the U. S. Patent Office, January 23d, 1867, pre- "paratory to obtaining the patent issued to him, "and dated February 12, 1867.

"I find this Exhibit to be composed of a metallic "ring, covered with a thick coating of the material "known in the arts as vulcanized hard rubber, said "material being the same as shown in Albright's "model above mentioned. This material is of a jet "black color, hard, tough, and elastic, is not gran- "ular in its structure, is uniform throughout in its "texture, and when cut with a knife, comes off in "tough shavings, not brittle or friable.

"IT HAS NO RESEMBLANCE WHATEVER TO ARTIFI-
"CIAL IVORY, *but more resembles very hard leather,*
"*and would form a good imitation as to its looks,*
"*of what is known as patent or enameled leather,*
"*but is stronger and more durable than any*
"*leather with which I am acquainted.* The mate-
"rial with which this Exhibit is covered is a good
"article of vulcanized hard rubber. It is harder
"and stronger than leather, has no tendency to
"crack or granulate, *and in that respect is entirely*
"*different from the Welling model,* which forms
"fissures in drying, and is so brittle that it almost
"crumbles under the action of the finger-nail after
"it is started or broken.

"*The Welling model, in its appearance, shows a*
"*not very good imitation of* ~~iron.~~ *The Albright*
"*Exhibit, No.* 10, *shows a very good imitation of*
"*a ring covered with enameled leather; the imita-*
"*tion, however, being far superior to the thing im-*
"*itated,* inasmuch as hard rubber is stronger,
"tougher, harder, and more durable than leather."

WELLING'S rings are plain cylindrical rings, without the projecting lap or fold, as are on a leather-covered ring; all of DEFENDANT'S rings have such a "lap."

STATEMENT AND EVIDENCE.

On March 19th, 1863, complainant obtained the patent for an IMPROVED MARTINGALE RING, under which this suit is brought. This patent relates back to, and is qualified by, complainant's patent for Factitious Ivory, Aug. 4th, 1857.

In 1866, 1867, and 1872 were granted the patents under which defendants have since been engaged in manufacturing rubber-coated harness trimmings, such as buckles, terretts, hooks, hames, *martingale rings*, and the like.

It is conceded and proved—

That defendants, within the jurisdiction of the Court, and the time named in the bill, have made

and sold a number of martingale-rings consisting of an iron-ring covered with a coat of vulcanized rubber, which coating, *after vulcanization*, has been submitted to the action of finishing dies.

Also, that from the time defendants began to make rubber-coated rings, up to about two years ago, they manufactured such rings entirely *without the use of dies;* and that defendants have made no rings out of other composition than vulcanized rubber.

In order to present the whole case in a brief glance—the record being a short one—the essential parts of the evidence are printed in this brief.

1. The complainant's patent of 1863 under which suit is brought:

WM. M. WELLING, of New York, N. Y., assignor to Samuel G. Welling, of New Rochelle, N. Y. Letters Patent No. 37,941. Dated March 17th, 1863.

To all whom it may concern:

Be it known that I, William M. Welling, of the City and State of New York, have invented, made and applied to use a certain new and useful improvement in RINGS FOR MARTINGALES, &c.; and I do hereby declare that the following is a full, clear and exact description of my said invention, reference being had to the annexed drawing, making part of this specification—wherein,

Fig. 1 is a plan of said ring, with a portion represented as broken open; and

Fig. 2 is a cross section of the frame.

Similar marks of reference denote the same parts.

In Letters Patent granted to me August 4th, 1857, a composition and mode of making FACTITIOUS IVORY is set forth, and out of said materials I have manufactured billiard balls, rings of various kinds, &c. My present invention does not relate to any particular composition as that in the aforesaid patent or any similar compound may be employed. *The nature of my said invention consists in the em-*

ing strength to the same, thereby [illegible] article of manufacture, and one [illegible] an IVORY RING, and possesses all the beauty of appearance, and can be afforded at a very much less cost.

IVORY RINGS, particularly such as are used for martingales, require to be made out of very solid ivory, in order to be sufficiently strong, and hence are quite costly.

In order to make my improved rings, I take a ring of metal, such as shown at *a*, or said ring may be formed by punching out a washer from a sheet of metal, or in any other suitable way. I take the amount of ARTIFICIAL IVORY composition, and by dies or by hand cause the said composition to completely envelop the said ring with as much uniformity as possible, as at *b*, and to give the exterior finish to the same, press and solidify the mass of composition around the ring by means of dies, and in so doing, any plain or more or less ornamental shape may be given to the said ring or the surface thereof. My ring is thus made of the desired ornamental appearance, while great strength is attained at very little cost.

What I claim and desire to secure by Letters Patent is the RING FOR MARTINGALES, &c., manufactured as set forth, with a metal ring enveloped in composition as and for the purposes specified.

As witness my signature this twenty-eight day of April, 1862.

WM. M. WELLING.

Witnesses:
S. HILER,
THOS. GEO. HAROLD.

2. Brief and claim of Welling's 1857 Patent (extracted from U. S. Patent Office Report):

"No. 17,949. WILLIAM M. WELLING, of New "York, N. Y.—Improvement in FACTITIOUS IVORY. "Patent dated Aug. 4, 1857.—Ten ounces of white "shellac, 4½ ounces of impalpable white (acetate of "lead, precipitated by sulphuric acid), 8 ounces of "ivory dust, and 5 ounces of camphor, are reduced "to a powder, and are heated and thoroughly in- "corporated; the mass is then brought into heated "moulds to be manufactured into various articles.

"*Claim.*—Forming ARTIFICIAL IVORY by thor- "oughly mixing and combining the articles speci- "fied, or others having equivalent properties while "under the operation of heat, substantially as "specified."

3. The complainant's process or mode of manufacture as described by himself:

WELLING, in defendants' Record says:

"Q. 4. Describe exactly, the manner in which "such rings first made by you were made?

"A. I took a piece of composition, of about the "weight required for a ring, made soft on a steam "table, then rolled out in length about the length "of two fingers; laid it out in a hot steel die; then "I took a hot iron ring and pressed it into the soft "composition that was in the die; then the com- "position enveloped most of the iron ring; the "balance of the iron ring uncovered was finished by "pressing the composition over the part of the ring "that was uncovered; then the other die forming "the other half of the ring was placed on the top; "the two halves, laid together, with the ring in it "were put under a press, and a fine surface was "brought to the surface of the ring by the pressure "and polish of the dies. Well, the ring was put on "a wooden pin, and the feather edge scraped off "with a tool; they can either be left that way or "polished over.

2. Brief and claim of Welling's 1857 Patent (extracted from U. S. Patent Office Report):

"No. 17,949. WILLIAM M. WELLING, of New "York, N. Y.—Improvement in FACTITIOUS IVORY. "Patent dated Aug. 4, 1857.—Ten ounces of white "shellac, 4½ ounces of impalpable white (acetate of "lead, precipitated by sulphuric acid), 8 ounces of "ivory dust, and 5 ounces of camphor, are reduced "to a powder, and are heated and thoroughly in- "corporated; the mass is then brought into heated "moulds to be manufactured into various articles.

"*Claim.*—Forming ARTIFICIAL IVORY by thor- "oughly mixing and combining the articles speci- "fied, or others having equivalent properties while "under the operation of heat, substantially as "specified."

3. The complainant's process or mode of manufacture as described by himself:

WELLING, in ~~defendants'~~ Record says: Record 35

"Q. 4. Describe exactly, the manner in which "such rings first made by you were made?

"A. I took a piece of composition, of about the "weight required for a ring, made soft on a steam "table, then rolled out in length about the length "of two fingers; laid it out in a hot steel die; then "I took a hot iron ring and pressed it into the soft "composition that was in the die; then the com- "position enveloped most of the iron ring; the "balance of the iron ring uncovered was finished by "pressing the composition over the part of the ring "that was uncovered; then the other die forming "the other half of the ring was placed on the top; "the two halves, laid together, with the ring in it "were put under a press, and a fine surface was "brought to the surface of the ring by the pressure "and polish of the dies. Well, the ring was put on "a wooden pin, and the feather edge scraped off "with a tool; they can either be left that way or "polished over.

"Q. 5. Does that description just given describe "the manner in which you now make them and "claim to sell under your patent?

"A. It does."

4. The defendants' process or mode of manufacture as described by defendant Albright:

ALBRIGHT, ~~in complainant's record~~, says:

"A. 4. Please detail the process by which those "rings were made?

Record 10

"A. We have different modes of producing the "rings shown in Exhibit 4.

"One mode, we take an iron ring, a sheet or "sheets of rubber rolled to the proper thickness; "cut from the sheet a piece in the proper form, "and envelop the iron ring with the covering "of rubber, pressing the edges in the form of "a lap, with the fingers, causing the rubber "to adhere, and become a homogeneous piece or "cover. Previous to covering the ring with the rubber covering cut from the sheet, we take a rubber "cement and apply it to the ring with a brush. "Rubber cement is made by dissolving rubber in "turpentine or benzine, which causes it to become a "paste or varnish, or glue. Such cement causes "the outer covering cut from the sheet to firmly adhere to the iron while being vulcanized. The ring "when covered has this outer coating of rubber in a "plastic state; the ring is then placed in an oven "and vulcanized. After the ring is taken from the "vulcanator, after the vulcanization, it is of irregular form or shape; we, to make the regular form "or shape desired, put it in a lathe chuck, and turn "it up in the form or shape desired. *Or*, by the "use of a steel die engraved in a certain form to "produce a ring with such ornamentations on the "outer ring as may be desired."

And, in same examination, witness further testifies: That all of the rings made by defendants were covered with plastic rubber composition only; that

this composition was applied to the ring by [illegible] only; that while the coating was in a plastic state it was vulcanized; that the rings were then finished by a lathe and not by dies; that about two years ago, they began the use of finishing dies, as a cheaper substitute for the lathe.

In explanation of the state of the art involved in this suit, defendants have put in evidence:

1. The fact that metallic martingale rings covered with a composition such as lacquer or varnish, had been in use for many years before complainant's invention. (See ALBRIGHT, Q. 6, for defendants.) Record 39

2. The fact that composition rings, without metallic cores, had been made in dies before Welling's invention:

In complainant's record, ELIOT says:

"× Q. 35. Do you mean to say, in the manufac-
"ture of rings, that dies were well known, prior to
"the invention in suit?
"A. * * * I believe rings were formed prior
"to that time, but without metal cores." Record 26

Also *post*, see "10," extract from English Patent to Poole.

3. The fact that pipes of lead composition have been made on iron cores by pressure in dies, as in the Tatham patent. See ELIOT, × Q. 55: Record 29

"× Q. 55. Is it not a part of your knowledge of the
"state of the art of manufacturing articles of com-
"position or plastic material, that pipes of lead com-
"position have been formed upon iron cores by
"pressure in dies?
"A. It is."

4. Also the facts as stated in A. 6 of PROFESSOR HEDRICK: Record 40

"Q. 6. What was the state of the art relating to
"martingale rings prior to 1862?

"Q. 5. Does that description just given describe "the manner in which you now make them and "claim to sell under your patent?

"A. It does."

4. The defendants' process or mode of manufacture as described by defendant Albright:

ALBRIGHT, ~~in complainant's record~~, says:

Record 10

"A. 4. Please detail the process by which those "rings were made?

"A. We have different modes of producing the "rings shown in Exhibit 4.

"One mode, we take an iron ring, a sheet or "sheets of rubber rolled to the proper thickness; "cut from the sheet a piece in the proper form, "and envelop the iron ring with the covering "of rubber, pressing the edges in the form of "a lap, with the fingers, causing the rubber "to adhere, and become a homogeneous piece or "cover. Previous to covering the ring with the rubber covering cut from the sheet, we take a rubber "cement and apply it to the ring with a brush. "Rubber cement is made by dissolving rubber in "turpentine or benzine, which causes it to become a "paste or varnish, or glue. Such cement causes "the outer covering cut from the sheet to firmly adhere to the iron while being vulcanized. The ring "when covered has this outer coating of rubber in a "plastic state; the ring is then placed in an oven "and vulcanized. After the ring is taken from the "vulcanator, after the vulcanization, it is of irregular form or shape; we, to make the regular form "or shape desired, put it in a lathe chuck, and turn "it up in the form or shape desired. *Or*, by the "use of a steel die engraved in a certain form to "produce a ring with such ornamentations on the "outer ring as may be desired."

And, in same examination, witness further testifies: That all of the rings made by defendants were covered with plastic rubber composition only; that

this composition was applied to the ring by hand only; that while the coating was in a plastic state it was vulcanized; that the rings were then finished by a lathe and not by dies; that about two years ago, they began the use of finishing dies, as a cheaper substitute for the lathe.

In explanation of the state of the art involved in this suit, defendants have put in evidence:

1. The fact that metallic martingale rings covered with a composition such as lacquer or varnish, had been in use for many years before complainant's invention. (See ALBRIGHT, Q. 6, for defendants.) Record 39

2. The fact that composition rings, without metallic cores, had been made in dies before Welling's invention:

In complainant's record, ELIOT says:

"×Q. 35. Do you mean to say, in the manufac-
"ture of rings, that dies were well known, prior to
"the invention in suit?
"A. * * * I believe rings were formed prior
"to that time, but without metal cores." Record 26

Also *post*, see "10," extract from English Patent to Poole.

3. The fact that pipes of lead composition have been made on iron cores by pressure in dies, as in the Tatham patent. See ELIOT, ×Q. 55: Record 29

"×Q. 55. Is it not a part of your knowledge of the
"state of the art of manufacturing articles of com-
"position or plastic material, that pipes of lead com-
"position have been formed upon iron cores by
"pressure in dies?
"A. It is."

4. Also the facts as stated in A. 6 of PROFESSOR HEDRICK: Record 40

"Q. 6. What was the state of the art relating to
"martingale rings prior to 1862?

"A. They were made of ivory, of various composi-
"tions known as artificial or factitious ivory; of
"metal coated with varnish, lacquer, japan, enamel,
"porcelain, metallic plating, compounds of rubber
"and gutta percha, and with leather."

5. Also English Patent of 1843, to BANTON.

This patent describes iron martingale rings, and other articles of harness trimmings, as being covered with a coating of kaolin, and then with a vitreous composition; the material part of the specification being in the following language:

"My improvements in the various parts of
"harness, which are subject during use, to friction,
"consists in covering such parts with a coating of
"enamel. The parts to which I apply the coating
"are "terrets," "hames," "swivels," "buckles,"
"rings," "dees," "hooks," and those parts of
"harness in general which are formed of metal;
"and the manner in which I apply it is as follows:
"I mix china clay with water until it has the con-
"sistency of cream, and I dip the articles to be
"enameled in this mixture; on removal from the
"said mixture they are set aside to dry, and
"when dry, they are heated in a furnace or
"oven until they acquire a red heat. The
"articles are then allowed to cool, and when
"cold, I sprinkle on them a small quantity of the
"powder called 'lead, or soft glaze.' The articles
"are again heated, and the said powder fluxes, and
"combines with the China clay, with which the ar-
"ticles are coated, and forms therewith an enamel.
"Instead of sprinkling the said lead or soft glaze
"on the articles, I sometimes mix it with water, and
"dip the articles in the mixture, The composition
"of the China clay, and that of the lead or soft glaze
"are well known, and constitute no part of my in-
"vention. I therefore deem a description of their
"composition unnecessary. Instead of enameling
"or covering all over with a vitreous composition,

"the parts of harness which are subjected to friction "during use, I sometimes only cover the interior "parts of the same with a vitreous lining; in such "cases I form linings of glass of a suitable form, "and attach them in any convenient manner to the "parts they are intened to defend from friction. "The said linings *are formed in moulds by processes "well understood*, and they may be made of glass "of any desired color. * * * *

CLAIM—"Sixthly. The application of a coating of "vitreous enamel to those parts of harness which "are subjected to friction during use, whether such "enameling be effected with the composition, and by the process hereintofore described, or by any "modifisation of such composition and process; "also, &c."

The drawing figure 11, represents the quantity of composition on the iron as being about equal to the quantity of iron in the ring. The specification does not limit the inventor to either the particular composition or the process described, and speaks of moulds forforming the coatings as well known.

6. The English Patent of 1839, to the CLARKS.

This patent is referred to in the Banton patent, for a more particular description of the mode of preparing and applying the composition and vitreous enamel to iron articles.

7. Also the Engiish Patent of 1849, to PARIS.

This patent describes a mode of coating iron articles with a vitreous composition.

8. Also English Patent of 1860 to BARNWELL & ROLLASON.

This patent relates to the manufacture of pyroxylene, and recites as follows:

"Our invention consists in dissolving pyroxylene in "any of its known solvents, adding thereto oils,

"animal, vegetable or mineral. * * To this we add, "if desirable, gums or resins, and also oxidisable "salts, etc. * * Any suitable coloring may likewise "be employed. Other mineral substance such "as * * are useful * *. Animal matter in the shape "of glue, gelatine, or wool flock, or of a nature "similar to these, we also find useful for the pur- "pose of strengthening the compound. The material "resulting from these combinations is applicable to "the manufacture of many solid, hollow or tubular "articles that hitherto have been made of glass, "china, metal, wood, india-rubber and such like "materials; and the treatment of the compound for "the purpose of making such articles would vary "with the nature of the article to be produced; for "instance, buttons may be made either by stamping "from a solid sheet of the new material, after the "manner of horn button-making, or *they may be "shaped in moulds whilst the material is in a plas- "tic or semi-fluid state.* So with drinking-cups, "books, and flasks * * *.

"We also make toys * * and many fancy articles "usually made in metal, wood, bone, glass, ivory, "china and earthenware, india-rubber, gutta-percha, "plaster and wax; and *our process of making such "articles is* (when the nature of the articles will ad- "mit of such treatment) *by employing moulds or "dies* (of any suitable material for which our com- "position has no affinity, or to which it will not "adhere,) *and casting or pressing out the articles "from the composition in a plastic*, semi-fluid or "fluid *state.*"

This patent shows that prior to Welling's invention many small articles of pyroxylene were stamped and pressed in a plastic state by moulds and dies in a mode identical with his.

9. The English Patent of 1855, to MAYALL:

This is simply a patent for artificial ivory, and shows that artificial ivory is older than the inven-

tion in suit, and older than complainant's 1857 patent for factitious ivory.

10.* The English Patent of 1852, to POOLE:

This patent was referred to by Professor HEDRICK in his deposition (~~defendants' record, folio 70~~) as to the state of art, and recites as follows:

Record 40

"In making rings, bridle-winkers or harness "ornaments, in substitution of like articles of "horse and carriage furniture, heretofore made "of metal, I mould the article, and then "subject the same to heat, or else I *roughly* "*make up the article to nearly the desired* "*form, and after having corrected the same by* "*heat, I cause them to be pressed in dies* when at "a temperature of about 300 degrees of Fahrenheit, "by which *a very excellent finish is obtained* to the "article."

Showing thus, that as early as 1852 it was a known invention to finish harness-rings by stamping them while in a plastic state.

11. The English patent of 1851, to NEWTON:

This patent was put in evidence by the complainant; it relates to the manufacture of vulcanized rubber, and recites:

"When it is desired that the compound of "caoutchouc or gutta-percha, shall serve as a "covering to the iron or other substance, a "thin sheet of the compound, sometimes one "thirty-second part of an inch in thickness, or "less, is pressed with great care upon the iron or "other substance so as to expel all air from be- "tween the adjoining surface, and to cause the most "perfect union and adhesion; the coated article is "bound with strips or ribbons of cloth, or other "suitable material, whereby the compound is kept

*This patent was not put in evidence.

"in close contact with the article during the pro-
"cess of hardening. The combined materials thus
"treated will be found to possess the qualities de-
"sired, the *iron* or other substance *giving strength*,
"and the *compound giving a hard and durable*
"*surface.* In this way may be produced many
"articles used in and about harness or carriages,
"such as saddle-trees, buckles, terretts, bits,
"stirups, *martingale rings*, dasher irons, and ar-
"ticles intended to be used as furniture, &c., &c."

This patent also recites:

"Another plan consists in *so treating the composi-*
"*tions while in a plastic state that they will harden*
"*into any desired shape.* * * * For this pur-
"pose the compounds of caoutchouc or gutta-percha
"before described, are *taken in the plastic state*,
"and cut or *pressed*, or otherwise *formed* into the
"exact shapes which it is desired they shall retain
"after vulcanization."

12. The admission by complainant (defts' record, folio 34,) that as early as 1856 he had knowledge that articles of artificial ivory (other than rings,) had been formed by pressure in dies.

Record 35

A. 10 & 11

The five Letters Patent of the United States, granted to ANDREW ALBRIGHT, under which defendants manufactnre.

Complainant presents two constructions of the patent in suit—one by the complainant himself, and the other by his expert witness. It is submitted that neither is the true construction.

Welling, the complainant, in his examination, says: That his invention and patent include all kinds of martingale rings covered with any kind of composition. And does not make any limitation as to the *composition* or the *process* of applying it. This absurd construction is overthrown by the proof

that martingale rings had been previously coated with lacquer composition; and also by the Banton ring and the Newton ring.

See WELLING, ~~in defendants' record~~, p. 8: Record 35

"Q. 6. What is the composition used under your "patent now in suit?

"A. *I claim all compositions for covering mart-* "*ingale rings, or rings for harness.*"

See, also, WELLING, ~~in complainants' record, p. 31:~~ Record 18

"Re-x Q. Do you claim that the black and the "red martingale rings, and *that all metallic harness* "*rings covered with composition of any kind are* "*subject to your patent of* 1868?

"A. *I do, most certainly.*"

No matter what the composition, or how it is applied, it infringes Welling's patent!

Even his expert witness cannot bring himself to this view, for he, ELIOT, says, in complainants', record, p. 58:

"78 x Q. Do you consider that the Welling pat- "ent covers any kind of a martingale ring covered "with composition of any kind, irrespective of the "manner in which the composition is applied and "finished? Record 35

"A. *I do not.*"

This repudiated construction need not claim any further attention.

Mr. ELIOT, the complainants' expert witness, shows his usual clever ingenuity in devising a construction to meet the exigency of the case.

He holds that the invention in suit is for "a ring having a metal core covered with a suitable plastic composition, *when* finished by dies." (38 x A.) Record 26

To quote his fullest opinion upon this point, complainants' record, p. 32:

"46 A. I have examined said patent, and do un- Record 18

"derstand the invention therein specified, and as I "understand said patent, *the invention therein* "*specified consists of a ring to be used for martin-* "*gale rings*, or other similar purposes, and said ring "is made in the following manner:

"1st. A metal ring of suitable size and shape is "provided as a core or foundation for the proposed "ring.

"2d. Said metal core is covered in some suitable "manner by a proper plastic composition such as "artificial ivory, which is mentioned as one kind of "composition suitable for the purpose, although "the inventor does not limit himself to a specific "kind of composition, but claims broadly a compo- "sition; and said composition, and metallic ring "inclosed therein, are then submitted to the action "of dies to press and solidify the mass of composi- "tion around the ring, thereby rendering the plastic "substance firm and durable, and at the same time "imparting a finish, either plain or ornamental, to "the ring, according to whatever may be the design "formed in the surface of the dies. Or, in other "words, and more briefly, *the invention consists of a* "*ring having a metal core covered with plastic com-* "*position when finished by dies*, thereby producing "an article of solidity and strength, at a very reduced "cost, to anything that had been produced prior to "said invention, so far as within my knowledge."

The specification of the patent in suit recites:

"The nature of my said invention consists in the "employment of a metallic ring within a ring, form- "ed of *artificial ivory*, or similar materials." And "the "claim" is as follows:

"What I claim and desire to secure by Letters "Patent is, *the ring* for martingales, &c., manufac- "tured *as set forth with a metal ring, enveloped in* "*composition*, as and for the purposes specified."

But the true construction of the invention is found in the deposition of Professor Hedrick whose opinion upon a question relating to the class of rub-

bgr and composition patents (of which he has had chief charge in U. S. Patent Office for twelve years), is entitled to the highest consideration.

~~In Defendants' Record, p. 20, Prof.~~ HEDRICK says:

Record 41

"Q. 10 What do you understand to be the inven-
"tion described in Welling's patent of March 19,
"1863, under which this suit is brought?"

"A. It is for *a martingale ring*, intended to imi-
"tate, as near as possible, an *ivory ring*, and is
"made by covering a metallic ring with a composi-
"tion such as is described in Welling's Patent of
"1857, for *artificial ivory*, or some similar com-
"pound."

In support of this construction, a brief space will be given to construing the patent.

All specifications of patents must be read in connection with tha pre-existing state of the art. In this case, that state shows that metallic martingale rings had been covered or coated with compositions of many kinds, of lacquer, varnish, leather, china, enamel and rubber; that factitious ivory had been known and stamped up in many shapes in dies; and that dies had been used for finishing rubber rings. So that every individual element referred to in this patent—the facitious ivory, the iron ring, the process of coating, and the process of using the dies—were old and well known at the time of the alleged invention; and the patent shows on its face that the patentee was well informed on these points, for he does not claim any *composition*, any *process*, or any *die*—he claims only the "*ring*."

In such a case as this, the doctrine of equivalents can be applied only within the most narrow limits.

After giving his name and residence, the patentee, Welling, says:

"I have invented, made and applied to use a cer-
"tain new and useful improvement in *rings* for *mar-*
"*tingales*, &c."

In these words he states that his invention is "an improvement in martingale rings," and conforms to the claim." No *composition*, no *process*, no *die* is claimed, only the "martingale ring." Let us see how he describes the mode of making this "ring." As he claims a "ring," which is the result of a process, he must describe the process, otherwise the patent would be of no use to the public; for the patent should be so full and exact as to enable those skilled in the art to make the "ring" by some process therein set forth.

The inventor proceeds to declare the nature of his invention:

"The nature of my said invention consists in the "employment of a *metallic ring* within a *ring* "*formed of artificial ivory*, or similar materials, "for giving strength to the same, thereby producing "*a new article of manufacture*, and one that is "stronger than an *ivory ring*, and possesses all the "beauty of appearance, and can be afforded at a "very much less cost."

Here, then, is the patentee's "brief," fully setting forth his invention in conformity with his "claim" —"the *ring* for *martingales*, etc.," "a new article of manufacture." Here again he shows his knowledge of the state of the art, and sets forth his invention correspondingly. Not a word about dies—not a word about any composition except "*artificial ivory*" or similar materials.

The meaning of the words "similar materials" will be discussed further on. After stating that "*ivory rings* are quite costly," the patentee describes his *process* of making his ring.

He first provides himself with a suitable iron ring —then, he says:

"I take the amount of *artificial ivory* composi- "tion, and by dies or by hand, cause the said com- "position to completely envelop the said ring with

"as much uniformity as possible, as at *D*, and to "give the exterior finish to the same, press and "solidify the mass of composition around the ring "by means of dies, and in so doing any plain or "more or less ornamental shape may be given to the "said ring or the surface thereof."

Again, the patent refers to the complainant's previous patent of August 4th, 1857, for factitious ivory, instead of repeating the description of the substance to be used in the second patent; so that in effect the description of the factitious ivory in the 1857 patent is imported into the 1863 patent. There is nothing else in the 1863 patent to show what kind of a composition is to be used, and therefore, it must be held that the factitious ivory described in the first patent, was to be used in the second. This being the case, it follows that the words "artificial ivory or similar materials" are qualified by the in 1857 patent; so that the "similar materials" must be similar to the *particular* artificial ivory described in the 1857 patent, and not merely similar to *any* kind of artificial ivory. The artificial ivory patented in 1857 was susceptible to the action of heat, and could be moulded in dies, and the exigencies of the 1863 patent required such a similar material. There have been other artificial ivories, among them some of Mayall's (see his patent in evidence), in which there were none of the ingredients, or their equivalents, used by Welling. In order to constitute an infringement, the material used by the defendant must be "similar" to the "artificial ivory" referred to in the specifications.

But the material used by the defendant is not only not similar to the complainant's material, but is in no sense similar to *any* artificial ivory.

It is dissimilar in every physical quality—in substance, color, toughness, elasticity, durability, texture, beauty and fashionableness; and especially is it dissimilar because it cannot possibly be manufactured by the process described in the patent, or even by the improved process described outside of the patent, by the complainant.

PROFESSOR HEDRICK's description of and distinction between these two alleged-to-be-similar materials is as follows, ~~defendants' record, p. 21~~:

"13 A. ARTIFICIAL IVORY is formed of a great "variety of materials, but the leading elements are "a solid, earthy material, such as ivory dust, pul- "verized bones, horn shavings, various white earths, "such as kaolin (china clay), metallic oxides, such "as oxide of zinc, infusorial earth, tripoli, mixed "with some cementitious or binding material, such "as glue, gelatine, albumen or other like material, "which can be formed into a liquid or semi-liquid, "so as to form a dough or paste with the solid ma- "terials above named. Other materials to change "the color or consistency of the mass are sometimes "added.

"*Hard rubber* is formed of gum caoutchouc or "india rubber, or other vulcanizable gum and sul- "pher, heated up to what is called the vulcanizing "temperature during the proper time. Other sub- "stances are sometimes added to change the color or "cheapen the article.

"The difference between hard rubber and artifi- "cial ivory is similar to the difference between the "very hardest leather and natural ivory. Artificial "ivory is more brittle and less elastic, and less "tough, than natural ivory, and apparently some- "what like, in hardness, to the enamel used for "covering iron, such enamels generally having in "their composition bone, earth, china, clay, and "other similar earths used in making artificial "ivory; the enamels have not the cement or liquid "part of the artificial ivory, the solid portions being "joined together by fusible material, and sometimes "covered with a glaze.

"Hard rubber is much harder than leather, but "shows, when polished, a surface similar to enam- "elled or patent leather, and also to the natural ma- "terial known as jet."

Even complainant's expert, Mr. ELIOT, admits

that "vulcanized hard rubber" is not a "similar material;" though he does it reluctantly, and apparently labors to obscure his opinion on this point, See Complainant's record, pp. 40.

ELIOT. 15×Q. [Quoting from the patent.] * * * "Does not that description declare that the inven- "tion has for its object the making a martingale "ring in imitation of an ivory ring, by the use of "the composition described in the Welling 1857 "patent, or by the use of a 'similar compound,' or "'similar material?'

"A. It does, in so far as the composition is con- "cerned.

"16×Q. Is hard rubber, such as is used on de- "fendants' martingale ring (shown in Defendants' "Exhibit No. 4), a 'similar material' or 'similar "'compound' to the 'factitious ivory' referred to "in the above quotation from the Welling patent?

"A. [Evasive answer given.]

"Question repeated.

"A. It is, in so far as relates to the formation of "the ring claimed in said Welling patent, under "which this suit is brought.

"17×Q. I did not ask you anything about the "*formation* of the rubber or the imitation ivory "upon the iron ring, but simply whether or not the "rubber referred to in the question was a 'similar "material,' or a 'similar compound,' to the 'fac- "tious ivory' named in the quotation—and again "repeat the question?

"A. *So far as relates to the substances them- "selves, they are, of course, different.*"

Record 23

DEFENDANTS, THEN, DO NOT USE A SIMILAR MATERIAL.

Do the defendants use the PROCESS described in complainants patent or practised by the complainant?

Defendants claim that *no* sufficient process is given in the patent, and that *the patent is indefinite and void for uncertainty.*

A. 4 & 5
Record 35

Record 17

Complainant swears that he cannot make his rings except by the process detailed in his examination (~~Defendants' Record, p. 8, Welling, A. 4-5. Complainant's Record, p. 30, 37-40 Re ex.~~), which process, so detailed specifies as absolutely necessary, a piece of ivory composition, the use of a steam table to soften the composition, the use of a *hot* die of a particular construction, and then the use of a *cold* press—none of which things, except the composition, are referred to in the patent. Here let it be noted that the defendants' rings are formed with a lap, or outer projecting edge, to imitate a leather covering, and that Welling and Eliot both admit that the dies used by Welling could not finish such a ring, and that defendants' dies could not finish a Welling ring.

Also, that they both declare that a die like Exhibit No. 7, having sharp edges, was absolutely necessary in making the Welling ring, and also that no such die is described in the patent (which see).

In support of this position, read a brief extract from Eliot's deposition, complainant's record, p. 45:

Record 25

"28 × Q. State whether or not, the patent in suit "refers to factitious ivory in five places?

"A. I believe it does.

"29 × Q. Does not the said specification mention "ivory rings" in two other places?

"It does.

"30 × Q. Does not the patent declare that it was "the object of the inventor to make a martingale "ring cheaper than an ivory ring?

"It does.

"31 × Q. Then it could not have been the pat-"entee's invention to make rings of a composition "which would be costlier than an ivory ring?

"A. No.

"32 × Q. Do you consider the use of dies an es-"sential part of Welling's invention in suit?

"A. I do, in the manufacture of rings as de-"scribed.

"33 × Q. What description of dies are there in the "Welling patent. Is there *any* description of the "shape or form of a die?

"The only description given of the dies are such "as to press and solidify the mass of composition "around the ring, making the ring either plain or "more or less ornamental in shape.

"34 × Q. Is there any specification in that patent, "of the form or dimension of the dies, or of the "material of which dies are made?

"A. Only in so far as the specification says that "'the ring is to be pressed and solidified by means "of dies, and in so doing make it plain or more or "less ornamental,' which evidently shows that the "dies must be made of such form and dimension as "to receive the ring, and of such strength as to press "and solidify the materials, and so finished as to "give the exterior surface of the ring whatever fin-"ish is desired to be put upon it. There is no draw-"ing other than the form of the ring to show the "shape of the dies, nor is there any description "given in the specification descriptive of the con-"struction of dies other than that to which I have "referred. * * "

If, then, as Welling says, he "don't know of any other way to make them," and his patent contains no such process and describes no such dies, it follows that *the patent is void for insufficiency.*

But suppose, for sake of the argument, that the above complex process is really in the patent, defendant insists that he does not use that process. He uses some of the elements, but those he uses are old, and he uses one that complainant cannot use—*vulcanization*—and he uses them in a different succession, thus entirely changing the process.

After defendants, by hand, cover the ring with their rubber in a plastic state, it is put into an oven and is *vulcanized*, coming out hard, ready to be *finished* or polished in any suitable way. For years this was done by lathe and hand, or buffer polish, without any die pressurs. And, so far as anything

except *cheapness* is concerned, the ring is then complete without the use of dies—complete in strength and in beauty.

If dies are to be used, the rings, *after* being fully vulcanized and converted from *plastic* rubber to *hard* rubber, are submitted to dies for finishing them. In the Welling process the dies are applied to the imitation ivory before it is hardened, and no vulcanization is used.

And if a workman were to take a Welling metal ring and a mass of plastic rubber, and apply it, as in Welling's process, and *then* submit it to the action of dies, he would utterly fail to make a ring like defendants', and would make only a worthless failure. *Defendants' ring cannot be made by complainant's process.* If Welling made any invention at all, it was a *process* which consisted in covering a metal ring, with plastic imitation ivory by the use of dies, which at once *formed and finished* the ivory around the ring. And that process comprised the several described steps in combination, and *only* those. Defendants' process does not use a "similar material"—does not use the dies to *form* or shape the plastic substance on the metal ring, for that is previously done by hand, by the device of using thin sheets of the material cut to the proper size, and he does use the process of vulcanization, which is an element in his mode of operation not in Welling's. The use of dies is *essential* to Welling's manufacture, not only to *finish* his ring, but also to *give it shape;* while, in defendants' manufacture, the dies are *non*-essential, being used chiefly to cheapen production, it being in proof that most of defendants' rings are made entirely *without the use of dies*, and that they can cease to use them without injury to their manufacture.

At the inception of his supposed invention, Welling may have had the following thoughts:

"I know of the Banton ring covered with china;
"I know of the Newton ring covered with rubber; I
"know of other plastic articles pressed in dies; I

"know of artificial ivory and all of the modes of "working it in dies, and I know that martingale "rings, made as usual of natural ivory, are costly. "Why can't I make a ring like Banton's or New-"ton's ring, using imitation ivory instead of plastic "china or rubber?"

He resolves to make such a ring! Up to this point all the ideas are old and public property, except the mere notion of using *imitation ivory* instead of kaolin or rubber.

Is the mere substitution of one old material (imitation ivory) for another, patentable? Evidently no, for, in making such a substitution, there could have been exercised no inventive skill. Is then the mere application of an old material to a new purpose—that is, a purpose new to that material—patentable? Evidently no, again, for the use of imitation ivory around an iron ring is precisely analogous to the like use of rubber or china, and is within the well-settled law of analogous use. To continue the supposition:—Welling makes such a ring by substituting imitation ivory for kaolin or rubber. Up to this time there is no patentable invention. He is familiar with the construction and use of dies of all kinds for stamping up and finishing countless articles in imitation ivory, and with the dies used by Poole for finishing his hard rubber ring. He then thinks: "Instead of finishing these rings by lathe and hand, I will stamp them in dies." Is it not evident that such a use of an old and well-known device, to produce an old effect, is such a use—a double use—as would suggest itself to any mechanic, and therefore does not involve any invention, and cannot be patented?

What are the several elements of this supposed invention: 1st, *imitation ivory*; 2d, *an iron ring*; 3d, the *process* of *coating* the ring; 4th, the *process* of using *dies*. Will it be seriously contended that a "combination claim" can be formed out of four such elements? But complainant contends for just

such a claim in maintaining that the claim is for "a ring, *when*" made substantially as described. If the Court construe the claim to have such meaning, it must hold that *the form is so defective* as to make the patent void.

For a "claim" must be for a single entity, a composition, an art, a manufacture, a machine, a process, or a *combination of coactive elements;* and cannot include, in a combination claim, things which differ in kind.

The patent claims a "ring," whereas it should have claimed a "process;" and complainant proves the use of a *process* by defendants. Even if the *process* were identical, a patent with a claim for the *result*—the "ring"—could not sustain a suit for the use of the "process." *

This point is fully discussed in Curtis on Patents, edition of 1867, sections 12 to 17.

The words, "The ring manufactured as set forth," are equivalent to the words "the ring as described;" and the word "manufactured" relates only to the *physical properties* of the ring, such as shape, and substance, and relative position and arrangement of its metal and ivory portions; and does not gather in, also, the various stages of *the process* of making. If any broader or other claim was desired, the claim would have been for the "process."

But what is the ring described? Beyond any fair dispute, it is a metal ring covered with artificial ivory, and defendants do not make such a ring.

To summarize:

Defendants claim—

1. That in view of the state of the art, the only construction of the claim, ~~consistent with the validity of the patent,~~ is for an iron ring, coated with artificial ivory, as a new article of manufacture.

The pre-existing state of the art restricts the doctrine of equivalents, in such a case as this, to the narrowest limits.

* If Welling really invented the process he should obtain a reissue and claim the process

true

That any construction of the claim which includes the use of any *process*, is bad, because it is of defective form.

The patent is either for a "ring," or for a "process." If for a ring, defendants do not make the ring; if for a process, they do not use the process. Taking the dilemma in either way, they confidently ask for a favorable decree.

and it is not claimed

All of which is respectfully submitted.

J. C. CLAYTON,

of *Counsel for Defendants.* and appellants

NEW YORK, No. 7 Warren street.

SUPREME COURT

OF THE UNITED STATES.

No. 221.

THE RUBBER COATED HARNESS TRIMMING COMPANY, and others,

Appellants,

vs.

WILLIAM M. WELLING,

Appellee.

BRIEF ON THE PART OF APPELLEE.

FREDERIC H. BETTS,

Counsel for Complainant and Appellee.

New York:
BENJ. H. TYRRELL, PRINTER, 74 MAIDEN LANE.
-:-
1878.

Supreme Court of the United States.

THE RUBBER COATED HARNESS TRIMMING COMPANY, ANDREW ALBRIGHT and LUTHER C. VOORHIES,

Appellants,

vs.

WILLIAM M. WELLING.

Respondent.

A bill in equity was filed in this cause Nov. 4, 1872, in the U. S. Circuit Court, for the District of New Jersey, to restrain the infringement of certain letters patent for an improvement in martingale rings, granted for the invention of the complainant on the 17th of March, 1863.

The bill is in the usual form, charging infringement of the Patent and praying an injunction and account, (p. 1).

The answer denies the novelty of the invention; alleges the prior use of the invention by a number of persons, and its prior description in the English Patents of Thomas and Charles Clark of 1839, Edward Banton of 1843, A. V. Newton of 1851, C. H. Paris of 1849, Barnwall and Rollason of 1860; denies infringement and concludes in the usual form, (p. 5).

Replication was duly filed and proofs taken.

The cause was argued on September 30th, 1873, and on May 25th, 1874, Judge Nixon filed a written opinion sustaining the validity of the letters patent on which suit was brought, and declaring that
4 the defendants must be held to have infringed (pp. 51–55).

A decree was filed June 2, 1874, in accordance with this opinion and referring the cause to a Master, to take an account of profits and damages, and report the same—costs were also allowed and a perpetual injunction against the defendants was granted and issued (folios 110-115).

The Master filed his report April 9, 1875, finding that the amount of profit realized by defendants, through their infringement, was $5,000, and
5 that no proof of damage had been submitted (fols. 116–118).

On this same day the final decree was entered against the defendants for the sum of $5,342.50.

The defendants thereafter, and on the 17th day of April, 1875, duly appealed to this Court.

The cause will be considered under several heads:

6 I.—The Position of the Parties.

The complainant is, and has been for many years, a very large manufacturer of composition goods, doing business in the city of New York.

Ever since April, 1862, he has been largely engaged in making and selling harness rings of various sizes and colors.

These rings, adapted by their several sizes for martingales, breeching rings, &c., have become widely known and largely used under the title of RUBBER MARTINGALE RINGS. (P. 17, Q. 43.)

The defendants, it appears by their answer, and by the bills of goods sold (Exhibit No. 3), are doing business under the name of a company having no real existence, and which is probably only used as a cover from individual responsibility. They name themselves in their bill as *agents*, but by their answer confess their real position. They are engaged in manufacturing harness rings of various sizes, termed by them "Rubber Coated Harness Rings." 7

This manufacture they admit on cross-examination (Albright's evidence, p. 11, q. 12) that they have carried on in defiance of, and after notice of their infringement from the complainant. 8

II.—CONSTRUCTION OF COMPLAINANT'S PATENT.

The invention of the complainant is simple but of very great utility, and can be best understood from an examination of the state of the art of making harness rings prior to Mr. Welling's invention.

It appears, by the evidence, that previous to 1862, harness rings had been made in a great variety of ways.

They had been made wholly of bone or ivory, of various compositions known as artificial or factitious or imitation ivory, of metal coated with varnish, lacquer, japan enamel, porcelain, japan, rubber, glass, enamel and metalic plating, compounds of rubber and gutta-percha, and leather; these coatings had always either been applied to the iron ring

by a brush or the fingers, or fused on to it by heat.

(Hedricks' Ev. Record, p. 40, q. 6; Newton Patent, Ex. No. 1. Banton Patent, Ex. No. 4, Record p. 34).

By means of the use of an iron ring coated
10 with the substances enumerated, a ring of great strength was obtained, and an exterior finish was given to it by the described coating. It appears, however, that owing to the methods adopted for applying this exterior coating, the rings so made failed to meet the requirements of the trade. The Japan finish was too thin and liable to flake off in use, (p. 37, q. 29), and the coatings of glass and enamel, probably from their expense, failed to give satisfaction. The problem to be solved was then this:

The strength of the solid ivory ring was to be obtained, and the ring was to be of such material that
11 it should be not only strong, but susceptible of high polish or ornamentation, and be possessed of compactness of fiber sufficient to prevent flaking off in use, and possessing all of these qualities, it must be off such cheap construction as to render it marketable in place of the ivory rings.

In solving this problem, Mr. Welling takes an iron ring for the centre or core of his projected harness ring, surrounds this core with a plastic composition of such a nature that it can be compressed, shaped and solidified and rendered capable of polish by the action of dies, and having subjected
12 it to this process, he produced a harness ring, strong by reason of its iron centre, and with compact, durable and highly finished exterior by reason of action of the dies which harden, shape and finish, the surrounding composition. The ring thus produced was a new article combining strength, durability of exterior and finish, never before obtained. He names as a suitable composition for the use described, an "artificial ivory" composition patented by himself in 1857.

This was natural and obvious for the reason that ivory rings, were, at the time, the most valued in the market, and he says that "any similar" or suitable composition may be used, that is one which may be subjected to the process of forming and hardening and finishing in dies, as indicated. The rings so formed are known as "Colored Rubber" rings, on account of the shades used in the manufacture. 13

The invention is fully described and claimed in the Patent. The Patentee says: "I take a ring "of metal, * * I take the amount of artifi- "cial ivory composition, and by dies, or by hand, "cause the said composition to completely envelope "the said ring * * * and to give the "exterior finish to the same, *press and solidify* "the mass of composition around the ring *by* "*means of dies* and in so doing, any plain or more "or less ornamental shape may be given to the said "ring or the surface thereof."

14

Claim. "The ring for martingales *manufactured* "*as set forth*, with a metal ring enveloped in com- "position *as and for the purposes specified.*"

Judge Nixon in his opinion (fols. 98 and 99), ably interprets the meaning of the patent in this connection, he says, "It is quite clear, indeed, that factitious ivory was the composition uppermost in his thoughts. Having the partiality of a parent for his offspring, he naturally imagined that no superior compound could be found or used. It may be conceded that the full extent of his invention had not then dawned upon him. Men often build better than they knew. * * * * It is clear that the patentee had no thought of confining himself or others to the use of the factitious ivory." 15

Robb v Ryw 1 Otto 15

and especially folio 101
Smith v Goodyear Co. 3 Otto 486

III. Infringements.

The question of infringement is very clear. The

defendants manufacture rings for harness made in the following manner:

An iron ring is taken for a core, precisely in the way described in the complainant's patent. The ring is then surrounded with "rubber composition" in a
16 plastic state. The composition is then vulcanized, and again heated so as to become more or less plastic and is then subjected to the action of dies, by which closeness of grain, high polish and ornamental appearance is given to the exterior composition.

The process is fully described in Albright's Patent Exhibit.

What the defendants have done, is to take an iron ring, as Mr. Welling does: they take a com-
17 position suitable for solidifying and finishing in dies, as he does; they surround the iron ring with the composition and press and polish it by dies as he does, and thereby produce an article in every way identical with that described and claimed by him. They do not even invent a new composition of their own, but adopt the old and well-known equivalent and substitute composition for covering harness rings, viz: vulcanized rubber, as described in Newton's English Patent of 1852, Exhibit No. 8.

The defendants, have then taken the old and well known iron ring, and the old and well known vul-
18 canized rubber composition envelope, and subjected their composition to the identical process described by Welling, and have *thereby* produced a ring having *the qualities* of strength, hardness, durability, finish and cheapness which Mr. Welling, for the first time succeeded in obtaining in conjunction.

A comparison of the specifications of the respec-

tive patents makes plain the identity of the two articles of manufacture, except in mere material. Thus Welling's Patent says, "I take a ring of metal," Albright's Patent, No. 5,156, says, "the metallic ring is first carefully cleaned by washing, &c." Welling's Patent says, "I take the amount of artificial ivory-composition" * * (my invention does not relate to any particular composition,) * *" "and by dies or hand, cause the said composition to completely envelope the said ring." The Albright Patent says, "I take a good quality of rosin or sulphur composition, commonly used, * * of a "consistence about equal to stiff dough, * * "I then apply a thin coating of the composition, " * * to the article, working and pressing it "firmly to the metal by the hand or otherwise." The article thus coated is vulcanized. The Welling Patent says, "to give exterior finish to the same, "press and solidify the mass of composition "around the ring by means of dies, and in so do- "ing, any plain or more or less ornamental shape "may be givrn to the said ring, or the surface "thereof." The Albright Patent says, "the dies "now being ready are slightly heated, and the "vulcanized articles, which it is better to have "heated, are put, one at a time, into the lower die, "while the upper die is pressed or dropped down "upon it with great pressure. As the die acts "upon the coating with equal pressure in all di- "rections the coating is made homogeneous, "dense, hard, tough, and susceptible to polish, "and is rendered more durable and better "than if not so pressed, the dies at the same "time cut off the supurfluous coating and apply or- "namentation, if desired."

19

20

21

See Mr. Eliot's Ev. Record, p. 21, q. 8, 9, 10.

It is objected, however, on behalf of the defend-

ants, that they do not infringe the complainants' patents, for several reasons which will be considered in their order.

1st. It is said there is no infringement, because the Welling Patent is stated to be for a "Martin-
22 gale" ring, whereas it is said that the defendants' rings are not *martingale* rings, but are used for other purposes about harness.

But inspection of the patent shows that the description and claim is for an improvement in rings for martingales, &c., that is martingale rings are named only as one class of rings, which may be made in the manner and have the qualities indicated.

But even if this had not been the case, and if the defendants' rings were not mar-
23 tingale rings, still it would be quite immaterial whether the invention was *named* as applicable to martingale rings only, if in reality other rings could be produced in the same way and have the same qualities. Thus, in Pike *vs.* Potter, 3 Fisher 55, it was held that "if a process of curing "meats designed for pork houses, be applicable "without substantial variation to domestic refrig-"erators, then it can not be used by others in do-"mestic refrigerators without infringing the pat. "ent."

But see also *Re.* Van Wagenen, 1, Off.
24 Gaz. 89.

But as a matter of fact, defendants' rings are known and used as martingale rings (folio 94, q. 6).

2d. Again, it is objected that the defendants do not infringe, because they say that the complainant uses "imitation ivory" composition, whereas they use "rubber composition, and that the

complainant's patent is limited to a ring made of imitation ivory only, in the manner described. But this is manifestly incorrect. The patent is for an "IMPROVEMENT IN MARTINGALE RINGS" generally, not for an imitation ivory martingale ring.

25

The patentee, as he was bound to do, indicated one kind of composition which could be used, and naturally as ivory rings were the most expensive and ornamental, and as he had himself invented an imitation ivory composition, suggested that as proper for use; but he is careful immediately after to state "my present invention does *not relate to* "*any particular composition* as that or any similar "compound may be employed" similar, that is, in being susceptible of the treatment indicated. (Eliot, p. 29, q. 56).

26

Again he says "The nature of my invention consists in the employment of a metallic ring within a ring formed of artificial ivory, or *other similar materials, &c.*

This expression is quite inconsistent with the theory that only composition resembling *ivory* was to be employed; in that case the nature of the invention would have been stated as "a ring formed of *my* artificial ivory or other imitation ivory composition." There is a clear contrast between the "artificial ivory" and the "other similar materials." The latter refers to compositions resembling other substances, otherwise the expression would be senseless.

27

Again, the *claim* is carefully guarded so as not to be limited to a ring of artificial ivory but is for "the ring for martingales, &c.," manufactured as set forth, "with a metal ring enveloped in *compo-*

sition," (not artificial ivory composition) "as and for the purposes indicated." This is a claim for *any* composition which will admit of being "manufactured as set forth."

See Mr. Eliot's ev., p. 18, q. 46; p. 23,
28 x-q. 15-18; p. 25, x-q. 27; p. 29, x-q. 56.

The case of Clark *vs.* Scott, 9 Blatchf. 301, was founded on a similar patent. The claim of the patent was for "a hand or portable toilet mirror, "constructed substantially as described, of a base "piece, with its handle extension piece or stiffener "glass and outer back and handle, made of *any* "*suitable composition* or cement."

In the specification the patentee suggested as a composition "a mixture in equal parts of paint, "sifted sawdust and shellac," but said, "I do not
29 "desire to confine myself to any particular com-"position or cement."

The Court held that the claim was valid, and was infringed by the construction of a mirror, having interior metal strengthener, the exterior being formed of a secret composition called "Lionite," all that was known of which was that it was "applied in a plastic state and afterwards hardened."

Again, the business of the inventor, Mr. Welling, under his patent, for many years, shows conclusively that in practice the invention was not regard-
30 ed as confined to artificial ivory goods.

The rings, Exhibit No. 6. made by Mr. Welling for many years under his patent, clearly are not all imitations of ivory, and yet are all manifestly made under the patents.

This question of whether the complainant's patent can be held to cover the employment of other materials than 'imitation ivory,' and whether the defendants can avoid infringement by using a 'rubber composition' which has been subjected to the process producing the patented result, is discussed at length in the opinion rendered by Judge Nixon 31.
in this cause. The learned judge says (fols. 97, 98, 99):

"It is insisted by the defendants, that if the patent is valid at all, it must be limited to a 'martingale ring intended to imitate ivory, and made by covering a metallic ring with artificial ivory, such as is described in complainant's patent of 1857, orome similar compound."

"Bearing in mind the established American rule that patents are to be construed liberally, and are
not to be subjected to a rigid interpretation. I 32
think that this construction is too narrow, and does not give to the patentee all that he is entitled to, under the specifications and claim of his patent. It is quite clear, indeed, that factititious ivory was the composition uppermost in his thoughts. Having the partiality of a parent for his offspring, he naturally imagined that no superior compound could be found or used. It may be conceded that the full extent of his invention had not then dawned upon him. Men often build better than they know; but where the fair interpretation of the words employed to describe an invention or 33
discovery includes matters not in the mind of the pattentee at the time, he is as fully authorized to claim the unlooked for, as he is the anticipated results * * * * * *

"*It is clear that the patentee had no thought of confining himself or others to the use of the facti-*

tious ivory; for, after referring to his patent of 1857, he says: "My present invention does not relate to any particular composition, as that (factitious ivory) or any similar compound may be employed. The nature of my invention consists in the employment of a metallic ring within a ring
34 formed of artificial ivory," or similar materials for giving strength to the same, &c., &c. He then claims a ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, (generally) as and for the purposes aforesaid,"

But again. The defendant can not evade the charge of infringement by substituting for the composition suggested by Mr. Welling, another and well known composition, and which had been previously known as a suitable covering for harness
35 rings.

What the defendants have done is merely to change the material suggested by Mr. Welling for another old material long known as suitable for the purpose, and capable of being subjected to the treatment employed by Mr. Welling, and thereby caused to possess the valuable qualities of hardness, durability and finish inherent in Mr. Welling's new article of manufacture.

Rubber composition afterwards vulcanized, is described in the Newton Patent, Exhibit No. 8, as a covering for metal harness rings. The defendants
36 took this composition, treated it as Welling described, and produced the article having the qualities Welling claims.

There is no invention in merely changing in a well-known situation one well-known material for another. Thus in Hotchkiss *v.* Greenwood, 11 How,

265. The patent was for a porcelain door knob, having a certain form of shank and spindle, but it appearing that the same shank and spindle had been previously used, and that porcelain knobs had also been used, the Supreme Court of the United States held that "if porcelain knobs were "not new, and the same kinds of shanks and spin- 37
"dles had been used with other knobs, the use or "substitution of porcelain instead of other material "in combination with such shanks, &c., will not "entitle the manufacturer to a patent, even though "such material may be better adapted for the pur- "pose."

So in the late case of Smith *vs.* Elliott, 1, Off., Gaz. 331, 333, Judge Woodruff held that "if a fabric" (or article such as a ring), "be already known "and in use, *change of color*, *change of mere ma-* "*terial*, change in its degree of firmness, or in the "firmness of the parts thereof, if these changes in- 38
"volve nothing new in combination nor in the re- "lations of its parts, nor in the office or function of "either part, the whole do not constitute invention "although for many purposes these may consti- "tute the greater excellency of the fabric."

See also *Re.* Robert Price, Comr, Dec., 1870, 45.
Re. J. G. G. Gannett, id. 48.
Re. A. H. Baldwin, id. 50.
Re. John Farrell, id. 105.
Re. R. R. Miller, id. 114.
Baily Washing and Wringing Machine Co. *vs.* Lincoln, 4 Fish 384. 39

The same rule is to be followed in determining the question of infringement as that of novelty.

Thus in Gould *vs.* Rees, 15 Wallace 187, it was held that "it is clear that an alteration in a patent-

"ed combination which merely substitutes another "*old* ingredient for one of the ingredients in the "patented combination, is an infringement of the "patent if the substitute performs the same func- "tion and was well known at the date of the "patent as a proper substitute for the omitted in- 40 "gredients." Apply this rule and the defendants' infringement is clear.

Rubber composition, vulcanized, was at the date of Welling's patent, *old*, and it was also well known as a plastic covering for harness rings to be afterwards hardened, at least as early as 1851, as shown by Newton's Patent, Exhibit 8, and see also, Mr. Hedrick's ev.

That the defendants appreciated the effect of the evidence, is clearly shown from their singular attempt to withdraw the Newton patent from the 41 case.

Record, folios 35 and 94.

Again. It hardly lies in the mouth of these defendants to claim that Mr. Welling's patent is confined to a ring the envelope of which is artificial ivory, in view of the allegations in their answer, setting up as defenses to the Welling patent the prior English patents of Newton, Paris, Clark, Banton and Barnwell—when these patents respectively describe articles of iron, coated not with artificial ivory, but with vulcanized rubber, enamel, vipeous compositions, 42 or a solution of pyroxaline.

And with reference to the question of an infringement by the defendants, see Judge Nixon's opinion in this cause (fols. 102, 108), where he pursues the same line of argument suggested under this head of the brief, at great length, coming to the inev-

itable conclusion of a manifest infringement, and closes by saying:

"It would seem, therefore, that the defendants are not permitted to shield themselves from the consequence of infringement, by incorporating into a patent the inventions of others, without, at the same time, so changing and adjusting the relations of the constituents then taken, as to produce a new and useful result. They have failed to show that this has been done." 43

"But, irrespective of this view, I am of the opinion, on the whole case, that the claim of the complainant's patent, fairly construed, is not to be limited to the use of factitious ivory; that it is broad enough to include the composition of rubber or gutta-percha, and that there should be a decree for the complainant according to the prayer of his bill." 44

IV. THE VALIDITY OF COMPLAINANT'S PATENT.

The sole remaining question is that of the validity of the complainant's patent.

The answer denied the validity of the patent and alleged the prior knowledge and use of the invention by Aaron Davis, Peter Hayden, S. E. Tompkins, Henry Addis, John Bergen, Richard Campbell, A. H. Dunscombe, Wood Gibson and Thomas Trainor, and its prior description in the several English patents already referred to. 45

No proof has been brought forward of any of the alleged prior knowledge or uses referred to, the sole evidence adduced is the several patents mentioned.

No one of these describes a ring with metal core surrounded by a composition envelope which has the hardness, durability and finish which results from the use of compressing dies in the manufacture.

46 The Newton patent describes metal rings coated with vulcanized rubber, but the rubber was pressed on with the fingers, and bound with "ribbons of cloth," (p. 19, fol. 37) not core pressed with dies, and therefore the product lacked necessary strength, and the compactness, firmness of grain and polish which the action of dies produces. This does not appear to have ever come much into use, and its value as a defense in this suit, may be judged from the fact that it was first marked as an exhibit in the case by the defendants, and being then withdrawn by them, was put in evidence by the 47 complainants, (fol. 35).

The Paris Patent, (Ex. 2,) describes only "a certain means of coating articles made of wrought "iron, with glass or other vitreous matter, so as to "keep off the atmosphere."

The method and result is essentially different from Welling's. (See Eliot, p 19, f. 37.)

The Clark patent (Ex. 3) is "for glazing and enameling cast iron hollow ware." It has no resemblance to Welling's patent. (See Eliot, p. 20, f. 37).

48 The Banton patent (Ex. 4) is for "forming or lining portions of harness with a vitreous composition."

It, too, is essentially distinguished from Welling's (see Eliot, p. 20, fol. 38).

The Mayall patent (Ex. 5) is for an artificial ivory

simply, and has no likeness to the invention in question (Eliot, p. 20, fol. 39).

The Barnwell patent is for coating material with solutions of pyroxyline. It, too, differs both in process and product from the Welling invention (Eliot, p. 20, fol. 39).

But it is alleged on behalf of the defendants, that the complainant's patent does not claim a composition enclosed ring having the *qualities resulting from the manufacture by the use of dies*, and made in that way, but a ring coated *with any composition*. This, however, is evidently a misapprehension.

The complainant's patent, after directing the use of a central ring of metal, and enveloping it in composition, states as follows: "*To give exterior finish* to the same, *press* "and *solidify* the mass of composition around the "ring *by means of dies*, and in so doing, any plain "or more or less ornamental shape may be given "to said ring or the surface thereof."

"My ring is thus made of the desired ornamen "tal appearance, while great strength is obtained "at little cost."

Claim. "The ring for martingales, &c., *manu-* "*factured as set forth*, with a metal ring envelop- "ed in composition as and for the purposes speci- "fied."

This is a claim for the composition-cased ring manufactured by, and having the qualities resulting from, the *use of dies*.

No other construction gives effect to all of the words of the Patents, and none other is consistent

No one of these describes a ring with metal core surrounded by a composition envelope which has the hardness, durability and finish which results from the use of compressing dies in the manufacture.

46 The Newton patent describes metal rings coated with vulcanized rubber, but the rubber was pressed on with the fingers, and bound with "ribbons of cloth," (p. 19, fol. 37) not core pressed with dies, and therefore the product lacked necessary strength, and the compactness, firmness of grain and polish which the action of dies produces. This does not appear to have ever come much into use, and its value as a defense in this suit, may be judged from the fact that it was first marked as an exhibit in the case by the defendants, and being then withdrawn by them, was put in evidence by the
47 complainants, (fol. 35).

The Paris Patent, (Ex. 2,) describes only "a cer- "tain means of coating articles made of wrought "iron, with glass or other vitreous matter, so as to "keep off the atmosphere"

The method and result is essentially different from Welling's. (See Eliot, p 19, f. 37.)

The Clark patent (Ex. 3) is "for glazing and enameling cast iron hollow ware." It has no resemblance to Welling's patent. (See Eliot, p. 20, f. 37).

48 The Banton patent (Ex. 4) is for "forming or lining portions of harness with a vitreous composition."

It, too, is essentially distinguished from Welling's (see Eliot, p. 20, fol. 38).

The Mayall patent (Ex. 5) is for an artificial ivory

simply, and has no likeness to the invention in question (Eliot, p. 20, fol. 39).

The Barnwell patent is for coating material with solutions of pyroxyline. It, too, differs both in process and product from the Welling invention (Eliot, p. 20, fol. 39). 49

But it is alleged on behalf of the defendants, that the complainant's patent does not claim a composition enclosed ring having the *qualities resulting from the manufacture by the use of dies*, and made in that way, but a ring coated *with any composition*. This, however, is evidently a misapprehension.

The complainant's patent, after directing the use of a central ring of metal, and enveloping it in composition, states as follows: "*To give exterior finish* to the same, *press* 50
"and *solidify* the mass of composition around the
"ring *by means of dies*, and in so doing, any plain
"or more or less ornamental shape may be given
"to said ring or the surface thereof."

"My ring is thus made of the desired ornamen
"tal appearance, while great strength is obtained
"at little cost."

Claim. "The ring for martingales, &c., *manu-*
"*factured as set forth*, with a metal ring envelop-
"ed in composition as and for the purposes speci-
"fied." 51

This is a claim for the composition-cased ring manufactured by, and having the qualities resulting from, the *use of dies*.

No other construction gives effect to all of the words of the Patents, and none other is consistent

with the rules of law for the interpretation of written instruments.

In his opinion in this case, Judge Nixon sustains this construction urged on the part of the complainant, both by argument and by decision.
52 He says, (fol. 100-101)

"To understand and correctly interpret the patent, some reference may properly be made to the state of the art. The defendants' expert, Mr. Hedrick, who seems to be an intelligent witness, says, that prior to 1862, martingale-rings were made in a variety of ways and of different materials—of ivory, of compositions, known as artificial, factitious, or imitation ivory; of metal, coated with varnish, lacquer, japan, enamel, porcelain, metallic plating, and compounds of rubber and gutta-percha, and leather—the only known methods of
53 applying the coatings to the iron ring, were by a brush or the fingers, or fusing on to it by heat. The ring gave the strength to the manufactured article, and the coating the exterior finish."

"The object of the complainant, by his inventions, was to introduce an improvement upon the known methods of coating, whereby he would impart strength, durability and greater polish to the surface, thus producing a more valuable, useful and beautiful result."

"His instrumentalities were all old—an iron ring,
54 a plastic composition and a die; but so far as appears in the case, they were *new in combination*. If his patent had been simply for a metallic ring, covered with any compound capable of being moulded, or with factitious ivory, or similar materials, it would have been void for want of novelty. If it had been for the use of the die in pressing and solidifying *plastic substances generally*, it would have been probably anticipated in this regard by

the English Letters Patent to Barnwell & Rollason of 1860, in which such use of dies is plainly indicated."

"But the invention is for a *combination*, and the combination is a metal ring, surrounded with some plastic composition like artificial ivory, of such a nature that it is capable of being compressed, solidified, and polished by the action of the dies, and which is in fact subjected to such action, whereby a martingale ring is produced with an exterior surface more durable and more highly polished than had before been obtained by different processes of manufacture and at greater cost."

55

Among the plainest rules is that if two constructions be possible, one of which will render the instrument void and the other sustain it, the latter is to be adopted—*ut res magis valeat quam pereat.*

56

If we could then conceive the construction contended for by the defendant possible, to wit: that the claim was for an iron ring encased in composition, no matter how the composition was applied—

This construction would render the Patents void for want of novelty, in as much as the evidence shows that iron rings encased in rubber composition, enamel, glass, &c., had been previously known, though they never had the qualities resulting from the use of dies. Nor would it help the case to say that to conform to the Patent the ring must be enveloped in a composition resembling ivory, that construction we have already seen, is untenable; and if it were not, the Patent would then be for the mere substitution of one material for another, and the fact that it was white like ivory, would not help it. An enameled ring might well be said to be a ring resembling ivory.

57

Both the words of the Patent and the rules of law prohibit therefore the construction contended for by the defendants.

58 V. It is plain from the foregoing considerations that the complainant's Patent is valid and has been infringed by the defendants.

It is therefore respectively submitted that the judgment of the Court below should be affirmed, and this appeal dismissed.

FREDERIC H. BETTS,
Counsel for Compl't and Appellee.

Supreme Court of the United States.

No. 221,

THE RUBBER COATED HARNESS TRIMMING CO., et al.,

vs.

WILLIAM M. WELLING.

Petition for Rehearing

or Modification of Order remitting Cause to Court below.

FREDERIC H. BETTS,

Counsel for Appellee and Petitioner.

New York:

BENJ. H. TYRREL, LAW AND JOB PRINTER, 74 MAIDEN LANE,

1878.

Supreme Court of the United States.

THE RUBBER COATED HARNESS AND TRIMMING COMPANY, ANDREW ALBRIGHT and LUTHER C. VOORHEES,

vs.

WILLIAM M. WELLING.

No. 221.

TO THE HONORABLE JUSTICES OF THE SUPREME COURT OF THE UNITED STATES:

Your petitioner, WILLIAM M. WELLING, respectfully represents that he is the complainant and appellee in the above entitled cause, lately heard in this Court, and that he verily believes there is good and sufficient cause why this cause should be reheard, and why some other order or decree should be made, than an absolute order directing his bill in the Court below to be dismissed, with costs; and he respectfully states the following as the grounds of his petition:

I.—He verily believes that this cause was not argued with the fullness and deliberation that the importance and nicety of the questions involved demands.

The hearing was had on the 12th and 13th days of February, 1878.

No appearance had been entered for your petitioner in the Supreme Court until the 7th day of February, 1878, and no transcript of the record was received by your petitioner's counsel until that day, only four days before the actual hearing.

On that day your petitioner's counsel received notice by telegraph, from the clerk of this Court, that the cause would be reached on February 11th.

An ineffectual application was made to postpone the case, owing to engagements of counsel, and that failing, your petitioner's counsel very hastily printed, with some slight alterations, the brief used by him in the Court below, and filed the same in this Court, so that no default might occur.

No brief had then been filed on behalf of the appellants, and no brief was filed until February 12, 1878, the very day the argument commenced.

No opportunity was therefore had to prepare any brief in reply to that presented by the appellant.

II.—Your petititioner further respectfully represents, that it was expected up to the very last moment that the cause would be settled without argument.

A settlement was solicited by the appellant, Mr. Albright, and your petitioner was in consultation with him up till nearly four o'clock on the afternoon of February 11th, the day before the hearing commenced.

The said appellant then offered to your petitioner the sum of four thousand ($4,000) dollars, payable

in instalments at various dates, in settlement of the case, but owing to disagreement as to details of the settlement, the negotiation failed, and about five o'clock on February 11th, as aforesaid, your petitioner wrote to his counsel that the cause could not be settled, and that he must prepare himself to attend to the argument on the next day.

Your petitioner verily believes that owing to the reasons aforesaid, the circumstances were not such as to permit of the careful and deliberate preparation and argument of this cause which its importance demanded.

III.—Your petitioner further very respectfully represents, that the Circuit Court decreed that your petitioner's patent was valid, and had been infringed upon by the defendant; but on the appeal in this Court, this cause has been decided on the ground of the alleged *invalidity* of the patent issued to him, and not that the appellant did not infringe; but that in the brief filed by the counsel for the appellant, it was *not assigned* as an alleged error that the Court below had decreed the patent to be valid, as required by rule 21, section 8, of this Court. The principal errors assigned being that the Court below had decreed that the defendants had infringed. In consequence thereof much less attention was given in the oral argument on the part of the petitioner to the question, whether the patent was invalid or not.

IV.—And your petitioner further respectfully represents that he is advised by counsel that the following questions involved in the decision herein are novel and important, and vital to the issues herein, and that said questions are of great general interest in litigations relating to the rights under

letters patent, and that a different decision of them would lead to a different decision of this appeal.

a. On this appeal this Court took into consideration, and in part based their decision upon, an alleged English patent which was not mentioned in the defendant's answer herein, and was not proved or produced or put in evidence in the Court below, and was not produced on the oral argument in this cause, or put in evidence in this Court; and your petitioner respectfully represents that he is advised that it had never been previously decided that such a patent could be referred to for the purpose aforesaid, or any purpose whatever.

b. On this appeal this Court expressed the opinion, and in part based their decision upon the ruling that there was and is no mechanical or patentable combination between the interior and supporting core or iron centre of a martingale ring and an exterior coating of *compressed* plastic composition, caused to adhere firmly to the rough surfaced iron centre, by being firmly compressed and compacted thereon by means of dies, but that the union between them is a mere "aggregation."

That no such issue was raised by the answer herein and such question was not argued by counsel in the Court below or in this Court, and your petitioner respectfully represents that (as he is advised by counsel) the question is an important question. And your petitioner respectfully represents that there are other questions in regard to the construction and bearing of prior patents referred to in decisions herein, which deserve further consideration and argument on his behalf.

And your petitioner respectfully and humbly represents that, as he truly believes and is advised, a more full and careful and deliberate argument on his part will result in a different decision herein.

Wherefore your petitioner respectfully prays that this cause may be ordered to be reheard or reargued, or that it may be submitted to the Court below to take proof as to the bearing of the English patent not in evidence, or that such other order may be made in the premises as may be just.

And your petitioner will ever pray, &c.

W. M. WELLING.

Subscribed and sworn to before me this 12th day of April, 1878.
JOHN A. SHIELDS,
[L. S.] *U. S. Commissioner*,
S. D. of N. Y.

SUPREME COURT,

OF THE UNITED STATES.

THE RUBBER COATED HARNESS AND TRIMMING CO., *et al.*,

vs.

WILLIAM M. WELLING.

City and County of New York, ss.:

FREDERIC H. BETTS, being duly sworn, says: I am counsel for the complainant and appellee herein, and argued this cause on his behalf, in the Circuit Court, and in this Court.

Up to about the 4th day of February, 1878, I supposed that my appearance for the appellee, Mr. Welling, was duly entered in this cause, as I had

caused a notice of the same to be mailed; but on said day I accidentally met Mr. Clayton, counsel for the appellant, and he told me that the cause would be reached in a short time. I expressed my surprise, as I had not received a copy of the record, and did not know it had been printed.

On the same day, I sent to the clerk of this Court requesting a copy of the printed record, and received the same on February 7th, with a notice that the same had not been previously forwarded, owing to the fact, that my appearance was not entered. On the same day, I sent a formal notice of appearance, and later in the day, received a notice by telegraph, that the cause would be reached on the 11th.

I advised Mr. Clayton, and as both he and I were engaged in attendance on the Circuit Court for this District, and were surprised at the case being reached so early, we made an endeavor by stipulation to have the cause passed and set down for a subsequent day. We learned that the Court would not allow this, and accordingly I very hastily had my brief used in the Court below, printed, with some slight clerical alterations, as I had no time to prepare another.

During these days and up to the afternoon of the 11th, I supposed the case would be settled.

I attended one meeting between the parties on February 11th, and left them in consultation at the office of the appellants' counsel, and supposed the case would be compromised, but about five o'clock on the afternoon of Monday, the 11th, I received a note from Mr. Welling, saying that the negotiations had fallen through, and that I must go on to Washington that night, prepared to argue the case the next day.

I accordingly left in the night train for Washington.

The appellants' brief had not been prepared up to that time, and it was only on the cars that evening, that a copy of it was handed to me for the first time. It was very similar to the one used in the Court below.

The argument of the case commenced on the afternoon of the next day, the 12th. A preliminary statement was made as to the position of the parties, and the Court took it into consideration whether they would hear the appeal.

The formal argument was commenced and concluded on the 13th.

The questions upon which this cause was decided, as stated in the petition of Mr. Welling, are, in my opinion, novel and important, as well in this case, as generally, and I believe they deserve a more careful consideration and argument on the part of Mr. Welling, than I was able to give them, owing to the circumstances aforesaid.

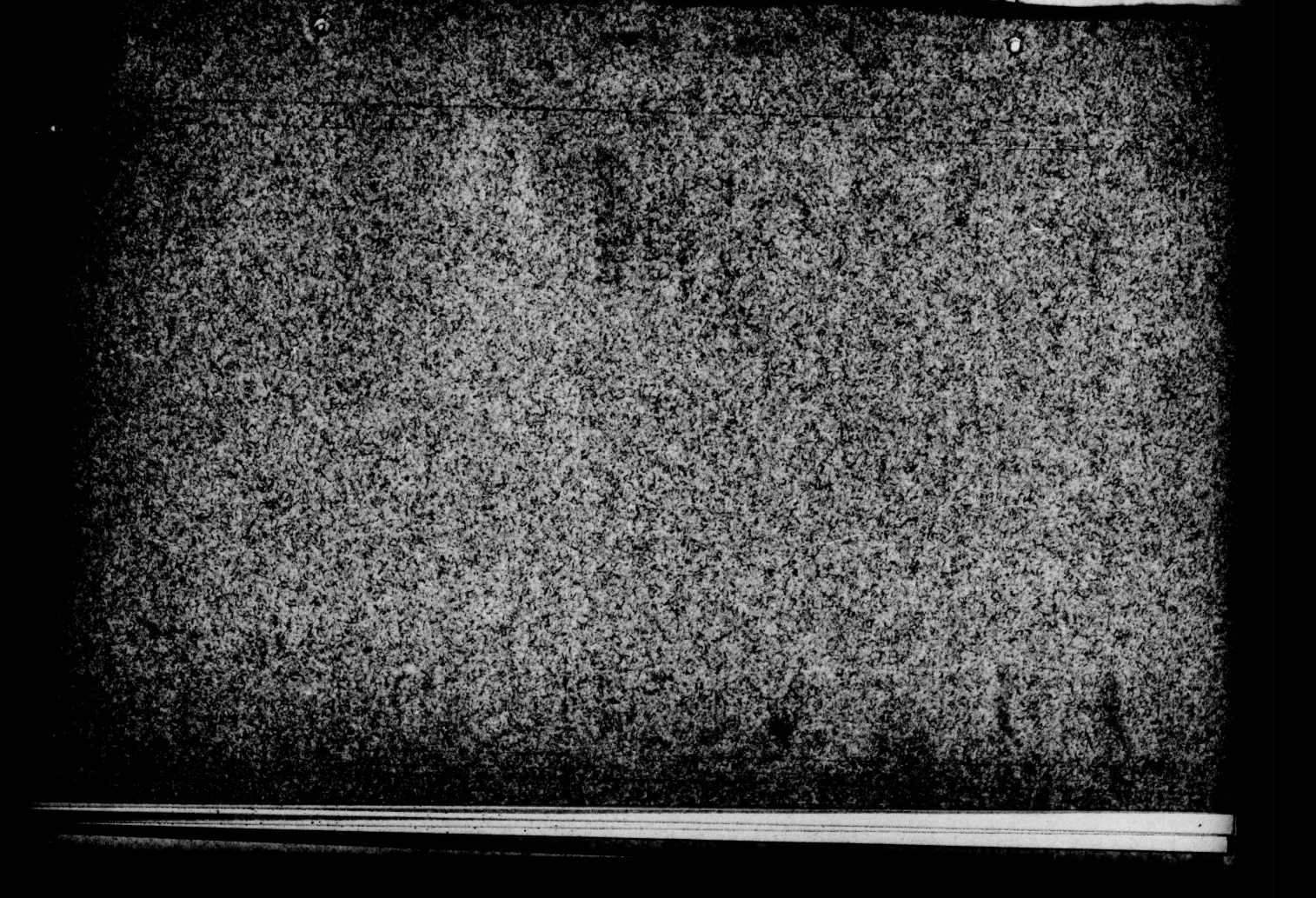
FREDERIC H. BETTS.

Sworn to, this 12th day of April, 1878, before

GEO. M. BAKER,

[L. S.] *Notary Public*,

New York Co.



Supreme Court of the United States.

No. 221.

THE RUBBER COATED HARNESS TRIMMING COMPANY,

vs.

WILLIAM M. WELLING.

Brief Memorandum of Points,

Suggesting the Proposed Argument in case this Court should permit a re-hearing.

FREDERIC H. BETTS,

Counsel.

New York:

BENJ. H. TYRREL, LAW AND JOB PRINTER, 74 MAIDEN LANE,

1878.

SUPREME COURT OF THE UNITED STATES.

No. 221.

THE RUBBER COATED HARNESS TRIMMING CO., ANDREW ALBRIGHT, and LUTHER C. VORHEES,

vs.

WILLIAM M. WELLING.

Brief Memorandum of Points and Authorities, suggesting the argument in case this Court should permit a rehearing.

As we understand the decision of this Court it is as follows:

1. That the Welling patent is for a harness ring enveloped in plastic composition.

2. That though the patent prescribes, as the character of the enveloping composition, that it should be applied by means of dies to "press and solidify the mass of the composition around the ring," (See patent) yet that that is not an *essen-*

tial quality of the composition or a necessary part of the method of manufacture.

3. That the patent is invalid for want of patentable novelty, because rings enveloped in plastic composition were old—and various composition articles had been pressed in dies, and there was no mechanical "combination" in surrounding a supporting metal centre or core for the ring, with an envelope of plastic composition solidified upon it by pressure.

This conclusion is understood to be arrived at, partly upon an English patent, which was not introduced in evidence in the court below, and was not produced on the oral argument in this Court, * and partly on the question of fact as to whether a "combination" existed between the envelope of compressed composition and its supporting centre.

No issue was raised on this point by the pleadings, no evidence was taken in regard to the mutual relation of the parts, and the point was not argued.

In the course of the decision, it is incidentally mentioned in commenting on the action of the dies on the ring, that "the perfection and improvement by pressure and devices adds to its finish and salability."

This was the uncontradicted evidence, both as to the complainant's and the defendant's rings.

It was this "perfected" and "improved" device that the complainant claimed.

On the two main points we submit the following:

---

* The Court or the reporter is in error, in stating in the note that the Newton patent was not in evidence; it was the patent of Moses Poole, just previously quoted, which was not in evidence.

1. This Court ought not to take into consideration a patent not in evidence, and submitted to the Court below.

a. Such course shuts off the complainant from all proof of the proper construction of such patent.

b. It prevents him from proving the date of his own invention, *non constat* but that he might anticipate it.

c. This Court should not introduce new evidence. This has been often refused.

Roemer *vs.* Simon, 91 U. S., 149.
Tyson *vs.* Myers, (decided at the present Term).

d. It is easy to see that very grave injustice might be done to parties by deciding an *appeal* on evidence not before the Court appealed from.

The question on an appeal is, was the Court below correct on the evidence before it. Not on what *might* have been, but which was not, produced.

2. There can be shown, it is respectfully submitted, a clear mechanical combination between the central ring of iron and the compressed composition envelope.

a. It was a combination between the thing which gives support and the thing supported. There was clear mutual relation and interdependence. The article of manufacture resulting from their union had its utility in the value resulting from the union.

Iron rings with a mere coating, not compressed on, were of less utility, because the coating tended to scale off.

Rings of compressed composition alone would have been useless, because lacking in strength

These points could have been clearly established by evidence, if definitely put in issue.

b. The iron ring necessarily had a rough surface, and the *compressing* of the composition upon it forced the envelope to adhere to all the little irregularities of the centre with great tenacity.

This is a material point in such an article as a harness ring, which is subjected to much rough usage.

The fact, therefore, that iron rings had been used alone, and that compositions, even in the shape of rings, had been previously pressed separately, ought not to be of weight.

3. It is respectfully suggested that the Court was led into misapprehension on several material points by the way in which answers of witnesses were used by the appellant.

a. The Court was mislead by a very ingenious use of a question of the appellant's counsel to Mr. Eliot, which question and answer is reproduced into the opinion.

Counsel asked Mr. Eliot:

"Is it part of your knowledge of the state of the "art of manufacturing articles of composition or "plastic materials that pipes of lead composition "have been formed *upon iron cores*, by pressure in "dies?"

"A. It is."

This question and answer would, in itself be an apparent answer to Mr. Welling's claim, but this

is only because from the context the meaning of the witness has been misapprehended, owing to the use of the word "cores."

The method of manufacture of lead pipes is described in Tatham *vs.* Le Roy, 14 How., 38, and 22 How., 231. The lead in a heated state is compressed out of a cylinder, through a circular aperture the size of the pipe.

The central opening in the pipe being caused by a stationary centre in the aperture, held in position by a bridge. This centre is technically called a "core." The heated lead is pressed out *past* this core, and the edges which are separated by the "bridge" reunite outside of it.

Of course the "core" is not left in the pipe—otherwise it would not be a pipe.

The machine is the same as that with which pipes of maccaroni are made.

It was to this machine that Mr. Eliot referred, but the similarity of *words* was used to create a misapprehension as to *things*.

The iron core in this process was not, in any sense the iron "core" centre of Mr. Welling's ring (though the centre of Welling's ring is familiarly known as a "core").

In the lead pipe process the lead was pressed *through* a die opening, and passed the stationary "core" at its middle. The pipe *passed by* the core, and was delivered *without* it. Mr. Welling's invention was for a composition pressed *upon* the core or centre, where it *remained*. It was for the combination of the central core, and solidified composition, *united* by pressure.

b. Mr. Eliot's evidence is also quoted when he

says: "I *believe* rings were formed in dies prior to that time (see plaintiff's invention), but without metal cores."

The ingenuity of the defendants was not able to discover any such thing; Mr. Eliot does not say it was a fact; he expresses his "belief;" his belief is immaterial, and as we have seen the fact, if it had been a fact, would have been equally so.

c. Mr. Hedrick's evidence is quoted when he says: "It was not new two years before the date "of Welling's application to make a martingale "ring by covering a matallic ring with a shell of "plastic material, which *could be* moulded or "pressed thereupon and afterwards hardened."

"Could be," not "was." It was just the thing which *could have been*, but was *not*, that Mr. Welling did.

The counsel for the complainant in his ingenious cross-examinations treated "moulds" and "dies" as synonymous and the Court seem to have followed his phraseology when they say:

"It thus appears that not only were there well "known and in extensive use before Welling's "patent iron rings, tubes, pipes, toys, and other "articles of manufacture enveloped and sur-"rounded by glass, enamel, rubber, and other like "substances applied and ornamented by means of "moulds *or* DIES."

This is true as to "moulds" but not as to "dies." There is not a particle of evidence, either oral or documentary, which shows the applying of *coverings* to any article by means of *dies*, by which the envelope of plastic composition was "pressed and solidified" on to the centre.

The distinction between a "mould" into which plastic material is *run*, and "dies," in and by which it is *pressed* is pointed out (p. 16, 923).

The Moses Poole Patent merely described "moulds," for various articles.

The Barnwell and Rollason Patent described "moulds and dies" for making various articles, but they were *wholly* of composition. There is no description of any article having a metal centre with an external coating of plastic composition *compressed* upon it by dies, or in any other way.

The Banton Patent, described rings having lining of "enamel or vitreous composition" formed in "moulds," *not* dies.

The Newton Patent described rings, terrets, &c., coated with vulcanized rubber bound on "by strips of cloth."

In *another* portion mention is made of forming articles *wholly* out of caoutchouc or gutta percha by cutting or pressing or otherwise forming them into the exact shape desired, but no suggestion is made of *compressing* the composition by dies upon an iron *centre*.

This comprises all the patents referred to, and none of them show the "improved and perfected," product made by Mr. Welling.

The only question which now arises is, can Mr. Welling's Patent be construed to describe and claim this "improved and perfected" product.

We think that a careful argument will convince the Court that it can.

In fact it describes *nothing else*, and the claim is to the ring, "manufactured as set forth."

That is, having the beneficial qualities resulting from the method of manufacture.

An article which has special valuable properties derived from and inherent in it because it is manufactured in a given way, is patentable as the result of that process which "inheres" in it.

Smith *vs.* Goodyear Dental Co., 3 Otto, 486.

Nor does it make any difference that the process was in itself old, if it had not been applied in that connection.

The Cummings patent was for a dental plate having the teeth embedded in vulcanite. The applying the teeth to the plate while in its plastic state, and then subjecting the article to the process of vulcanization, by which the teeth are given a tight joint and the whole made a much "improved and perfected" article which was held by the court to be patentable; and this, though dental plates were old, and rubber composition was old, and vulcanization was old—each *by itself*.

So here, we believe it was amply shown by the evidence, that though iron rings were old, and plastic compositions were old, and pressing such compositions in dies was known, yet that it was *not* known prior to the Welling invention that an iron ring could be covered by plastic composition *compressed* upon it by dies. And, certainly, rings covered by compressed composition, which compression solidified the envelope and insures its firm union with the supporting centre is nowhere shown in the prior patents.

That this invention was valuable and useful is shown by the fact that the defendants themselves patented dies for accomplishing this very result on their own articles.

It is only to be noted in conclusion, that Mr. Welling's evidence is misunderstood when he is quoted, as saying that he claims "harness rings covered with composition of *any kind.*" The context (p. 17--18), shows that the witness was speaking of *his own* black and red martingale rings, or various compositions, all of which were *die pressed.* He certainly did not mean that he claimed to include any compositions, unless they were *compressed* on by dies, for he repeatedly states that dies, are *absolutely necessary* (p. 17, q. 40 ; p. 35, q. 9 ; p. 37; q. 33.)

We respectfully submit therefore, that this cause should be re-heard, to the end that some other order may be made in the premises.

If the patent not in evidence should be considered, the case ought in any event to be remitted to the court below and re-opened for the taking of evidence in regard to it—so that the complainant may have an opportunity to meet it.

Respectfully submitted,

FREDERIC H. BETTS.